

AUTHOR INDEX

- Aaij, C., 259, 284
 Aaronson, S. A., 710, 715, 730, 747
 Aarsman, A. J., 381
 Abdou, N., 917
 Abdulaev, N. D., 395
 Abel, C. A., 891, 898
 Abelson, J., 140, 244
 Abelson, P. H., 294
 Abita, J. P., 84, 117
 Abo-Ahmed, H., 709
 Abou-Issa, H. M., 360
 Abrahams, H. E., 626
 Abramowitz, N., 74, 80, 82
 Abrams, R., 296, 312, 945
 Abrosimova-Amelyanchik, N. M., 237
 Abuelo, J. G., 155, 160
 Achter, R., 115, 514
 Achong, B. G., 736
 Achs, M. J., 476, 486, 489, 490
 Ackerman, D. R., 661
 Ackerman, E., 478, 480
 Ackers, G. K., 41, 878, 1000
 Ackman, R. G., 326, 331, 332
 Acs, G., 207, 965
 Acton, F. S., 478
 Ada, G. L., 905, 915
 Adair, F. W., 677
 Adair, G. S., 616
 Adam, G., 789
 Adamany, A., 614
 Adams, E. T., Jr., 40
 Adams, G. A., 350
 Adams, H., 201
 Adams, J. M., 232, 237, 239, 240, 245, 531, 537, 541
 Adams, M. J., 64
 Adams, R. L. P., 296, 312
 Adams, W. R., 743, 744
 Adamson, J., 989
 Addison, R. F., 326
 Adelman, G., 778
 Adelman, M., 489
 Adelman, R. C., 657
 Adey, W. R., 783
 Adinolfi, M., 906
 Adler, F. L., 913
 Adler, J., 298, 590
 Adler, T. K., 821, 823, 824, 826, 829, 830
 Aebl, H., 953, 963
 Aebl, H. E., 813
 Agate, A. D., 373
 Agee, J. R., 1005
 Ageno, M., 138
 Aghajanian, G. K., 791
 Agostini, A., 662
 Agronoff, B. W., 361, 370, 372
 Agrawal, K. M. L., 602
 Ahlfors, C. E., 657, 658
 Ahmed, A., 165
 Ahmed, S. I., 165, 439, 440
 Ahn, C.-S., 807
 Aikawa, T., 873, 874
 Alhaud, G. P., 362, 452, 453, 454
 Ainsworth, S., 1017, 1018, 1023
 Aizawa, Y., 372
 Akamatsu, Y., 366
 Akazawa, T., 403
 Akera, T., 833
 Akert, K., 790, 809
 Akhtar, M., 876
 Aki, K., 880
 Akinrimisi, E., 170
 Akita, T., 343, 344
 Aksel'rod, V. D., 237, 244
 Aladjim, E., 382
 Al-Askari, S., 910, 914
 Alben, J. O., 922, 992, 1028
 Albers, R. W., 562, 591
 Alberts, A. W., 449, 452, 453, 454, 758, 759, 760, 762
 Alberts, B. M., 192, 193
 Alberta, R. A., 487
 Albrecht, G., 643
 Albright, C. D., 591
 Albright, D. A., 40
 Albritton, W. L., 967
 Albro, P. W., 325, 326, 337
 Alden, R. A., 64, 65, 69, 70, 83, 88, 694
 Aldrich, C., 733
 Aldrich, T. B., 505, 506, 517
 Aleem, M. I. H., 337, 677, 689, 690
 Alema, S., 969
 Alford, A. C., 733
 Alfsen, A., 990, 998, 1008, 1009
 Algranati, I. D., 532, 533, 536, 537, 540, 541, 550
 Alioto, M. R., 647
 Allan, N., 986
 Allen, C. M., 327
 Allen, D. W., 57, 741
 Allen, J. M., 876
 Allen, M. B., 410, 411, 413, 414
 Allen, S. H. G., 760, 767
 Allen, W. S., 616
 Allende, J. E., 460, 461, 462
 Allewell, N. M., 65, 67, 68, 69, 70, 73, 92, 93, 94, 111, 853, 855
 Allfrey, V. G., 162, 164, 167, 168, 171, 172, 173, 215
 Allison, W. S., 102, 103, 107, 659
 Allmann, D. W., 266, 267, 268, 277, 937
 Alm, G. V., 906, 907
 Aloni, J., 212, 214
 Aloni, Y., 706, 713, 716
 Alpers, J. B., 647
 Alpert, Y., 991, 993
 Altman, C., 489
 Altman, J., 778, 810, 813
 Alvarado, F., 684
 Alworth, W., 327
 Amakawa, A., 653
 Amaldi, F., 183-226, 186, 188, 191, 192, 195, 203, 204, 205, 209, 210, 212, 217, 218
 Amano, M., 200
 Amante, L., 893
 Ambler, R. P., 691, 693, 694
 Ambrose, E. J., 601, 630
 Ambrose, K. R., 718
 Ames, B., 165
 Ames, G. F., 584
 Ames, J., 398, 399
 Amiconi, G., 984, 991, 995, 1004, 1011, 1012, 1014, 1015, 1016, 1023, 1030, 1031, 1036
 Ammann, J., 541
 Amos, H., 941, 942
 Amos, M. S., 508, 509, 512
 Anai, M., 601, 602, 603
 Ananieva, L. N., 167
 Anden, N. E., 833, 834
 Anderegg, J. W., 528
 Anderer, F. A., 705, 706, 707, 741
 Andersen, N. H., 332
 Andersen, R., 871
 Anderson, B., 608, 654
 Anderson, B. E., 562, 563, 564, 565, 566, 567, 568,

AUTHOR INDEX

- 569, 571, 580, 581, 589
 Anderson, B. M., 108, 878,
 879, 880, 881
 Anderson, C. D., 108
 Anderson, G. W., 860
 Anderson, J. A. C., 199
 Anderson, J. H., 476, 480
 Anderson, J. M., 399
 Anderson, M. E., 989
 Anderson, N. G., 338, 371,
 718
 Anderson, N. M., 984, 1008,
 1010, 1016, 1018, 1023
 Anderson, P. M., 764
 Anderson, R. E., 334, 341,
 342
 Anderson, R. L., 562, 563,
 654, 657
 Anderson, R. N., 518
 Anderson, S. R., 993, 1004,
 1007, 1008, 1020, 1026,
 1027
 Andersson, A., 648
 Andersson, B. J., 890
 Ando, T., 315
 Andoh, T., 199
 Andranik, B., 1016
 André, J., 256, 260, 261,
 265, 266
 Andreeva, I., 567
 Andrews, A. T. de B., 601,
 602
 Andrews, H., 722
 Andrews, P. A., 990
 Aneja, R., 341, 346, 369
 Anfinsen, C. B., 69, 118,
 119, 122, 854, 855, 856,
 858, 859, 899
 Angelergues, R., 784
 Angeletti, P. U., 806
 Anken, M., 717, 730
 Ankerst, J., 733
 Anraku, Y., 586, 587, 589,
 969
 Ansari, M. N. A., 331
 Ansell, G. B., 364, 368
 Ansell, N. J., 614
 Ansevin, A. T., 1003
 Anson, M. L., 102
 Antoine, A. D., 458
 Antonini, E., 977-1042; 27,
 37, 57, 58, 106, 878, 879,
 978, 979, 982, 984, 989,
 990, 991, 993, 995, 996,
 997, 998, 999, 1000, 1002,
 1003, 1004, 1005, 1006,
 1007, 1008, 1009, 1010,
 1011, 1012, 1013, 1014,
 1015, 1016, 1017, 1018,
 1019, 1020, 1021, 1022,
 1023, 1024, 1026, 1027,
 1030, 1031, 1032, 1033,
 1034, 1036
 Antunes-Rodrigues, J., 512,
 515, 516, 518, 521
 Anusiem, A., 1009, 1010
 Aoayagi, S., 243
 Apgar, J., 195, 229, 244
 Apgar, P. A., 871
 Apirion, D., 196, 197, 198,
 213
 Aposhian, H. V., 300, 309,
 313
 Appel, S. H., 810
 Appella, E., 438, 661, 892,
 893
 Applebaum, S., 194
 Appleby, C. A., 676, 681,
 682, 688
 Appleman, M. M., 645,
 646
 Applequist, J., 133
 Aprison, M. H., 835, 876
 Aquilonius, L., 200
 Arakawa, I., 344
 Arber, W., 314
 Argetsinger, J. E., 532
 Argyrakis, M. P., 187
 Argyrakis-Vomvoyannis,
 M. P., 551
 Argyris, T. S., 947
 Arias, I. M., 270, 276, 277,
 938, 946, 960
 Arigoni, D., 764
 Arima, K., 573, 677
 Arima, T., 237
 Arimura, A., 501, 504,
 505, 507, 508, 512, 513,
 514, 515, 516, 517, 518,
 519, 520, 521, 522, 822,
 829
 Arizmura, G. K., 640
 Arion, W. J., 655, 936
 Aris, R., 486, 490
 Arison, B. H., 856, 857,
 860
 Arlinghaus, R., 460
 Armstrong, D., 740
 Armstrong, J. A., 145
 Army, T. J., 389
 Arndt, U. W., 67
 Arnold, H., 659
 Arnon, D. I., 400, 403,
 410, 411, 413, 414, 415,
 871
 Arnon, R., 83, 109
 Arnone, A., 65
 Arstein, H. R. V., 185
 Arstein, P., 737
 Arnow, L., 821, 824,
 826, 827, 830
 Aronson, A. I., 191, 195,
 196, 198, 217, 931, 966
 Aronson, N. N., 625
 Arora, H. L., 808
 Arqueros, L., 803
 Arrio, B., 897
 Arroyo-Begovich, A., 438
 Arscott, L. D., 872, 873
 Arstila, A. U., 377
 Artom, C., 368
 Arvidson, G. A., 387
 Arwidson, B., 398
 Asai, J., 59
 Asami, H., 876
 Asami, M., 505
 Asbell, M. A., 59
 Aschheim, P., 511
 Ashby, W. R., 779
 Ashida, K., 869
 Ashman, D. F., 582, 587
 Ashman, R. F., 901, 909
 Ashmore, J., 13
 Ashwell, M., 251-90; 260,
 262, 271, 272, 274, 275,
 280
 Askonas, B. A., 145, 891,
 897, 911, 912, 913, 914
 Asofsky, R., 907
 Assali, N. S., 483
 Asselineau, C., 329
 Asselineau, J., 329, 347,
 351
 Astbury, W. T., 59
 Asteriadis, G. T., 234,
 242, 245
 Astrachan, L., 373
 Atassi, M. Z., 116, 118,
 119
 Aten, B., 69
 Atherton, R. S., 371
 Atkinson, D. E., 59
 Atkinson, M. R., 280, 873
 Attardi, B., 174, 188, 265,
 283, 931, 966
 Attardi, G., 183-226; 140,
 146, 147, 148, 152, 153,
 154, 155, 157, 174, 183,
 185, 188, 190, 191, 192,
 195, 196, 198, 203, 204,
 205, 209, 210, 212, 213,
 214, 215, 216, 217, 218,
 265, 283, 931, 966
 Atwood, C. C., 201, 213,
 214, 215, 216
 Aubert, J. P., 677
 Auernbach, V. H., 930
 August, J. T., 527-60;
 459, 528, 529, 530, 531,
 536, 537, 540, 543, 544,
 545, 546, 547, 548, 550,
 551, 552
 Aurbach, G. D., 848
 Aurell, G., 601, 613, 615
 Austin, J. B., 723, 730
 Autillo, L., 810
 Avers, C. J., 254
 Avey, H. P., 92, 899
 Avigan, J., 331, 332, 813
 Avron, M., 389, 390, 391,
 392, 393, 395, 396, 397,
 399, 400, 401, 402, 403
 Avruch, J., 115
 Awwad, H. K., 942
 Axelrod, B., 404
 Axelrod, D., 713, 716
 Axelrod, J., 794, 823, 829,
 967
 Axén, R., 859
 Azari, P., 109
 Azoulay, E., 457

- Azuma, I., 350
 Azzi, A., 377
 Azzone, G. F., 372
- B
 Baba, K., 727
 Babcock, R., 366
 Babin, D. R., 78
 Babinet, C., 170
 Bachelor, H. S., 828
 Bachmann, E., 266, 267, 268
 Bachvaroff, R. J., 209
 Backstrom, S., 170
 Baczyński, E., 345
 Baddiley, J., 346, 347, 374
 Bade, W. L., 810
 Bader, J. P., 738, 739, 740,
 741, 743, 744
 Baer, E., 344, 345, 346
 Baev, A. A., 237, 244
 Baginsky, M. L., 873
 Bagli, J. F., 341
 Baguley, B. C., 244
 Bahi, O. P., 601, 602,
 604, 605, 612
 Bailey, E., 270, 276, 660,
 661
 Bailey, G. S., 662
 Bailey, J., 1009
 Ballin, G., 448, 449
 Bain, G., 822, 830
 Baird, C. E., 649
 Baker, B. R., 102, 111,
 122
 Baker, G. L., 331
 Baker, J. R., 612, 614
 Baker, N., 481
 Baker, R. F., 197, 198,
 967
 Bakerman, S., 629
 Balakrishnan, G., 369
 Balazs, E. A., 601, 629
 Balazs, R., 481
 Baldesten, A., 296, 873
 Baldi, M. I., 536, 550
 Baldry, C. W., 411, 412,
 413, 414, 415, 417
 Baldwin, C., 601, 613, 615
 Baldwin, R. L., 133, 134,
 136, 146, 431, 432, 433,
 434, 436
 Balfour, B. M., 915
 Balinsky, J. B., 941, 946
 Balis, M. E., 953
 Ball, E. G., 937, 954
 Ball, E. M., 601
 Ballard, F. J., 657
 Ballou, J. M., 662
 Ballou, C. E., 337, 347,
 350
 Ballou, D., 870
 Baltimore, D., 197
 Balt Scheffsky, H., 396,
 398
 Balt Scheffsky, M., 396,
 398, 399, 401
- Baluda, M. A., 740, 741,
 744, 746
 Bamberger, E. S., 412,
 415, 416
 Ban, T., 653
 Ban, Y., 107
 Banaszak, L. J., 37, 110,
 990
 Bandurski, R. S., 405, 408
 Banerjee, A. K., 544, 545,
 546, 547, 548, 550
 Banerjee, R., 991, 1001,
 1002, 1009, 1011, 1015,
 1020, 1031, 1036
 Banerjee, U., 822
 Bank, A., 952
 Barajas, L., 281
 Baram, P., 910
 Barbee, T., 430
 Barber, A. A., 654
 Barbu, E., 380
 Barel, A. O., 107
 Barenholz, Y., 343
 Barg, W. F., 847
 Baril, E. F., 967
 Barkemeyer, H., 856, 857,
 860
 Barkley, D. S., 787
 Bartletta, A., 257
 Barlow, G. H., 27, 528,
 529, 530, 533, 630, 693
 Barman, T. E., 119, 120
 Barnard, E. A., 27, 92,
 105, 106, 110, 111, 116,
 119
 Barner, H. D., 300, 305,
 309
 Barnes, C. D., 778
 Barnes, J. E., 302, 315
 Barnes, M. J., 601
 Barnett, W. E., 185, 258,
 263, 279
 Barnum, C. P., 296
 Baron, J. M., 327
 Barondes, S. H., 374, 947
 Barr, L. M., 737
 Barr, Y. M., 736
 Barrell, B. G., 195, 209,
 210, 217, 218, 230, 231,
 232, 236, 237, 238, 239,
 240, 241, 244, 245, 531
 Barrett, J. F., 502, 505,
 506, 507, 508, 509, 513,
 519, 520
 Barritt, G. J., 762, 763
 Barak, G., 964
 Bartels, E., 788
 Barth, R. F., 919
 Bartholomew, B., 621
 Bartley, W., 270
 Barto, E., 661
 Bartos, E. M., 236
 Bartsch, R. G., 680, 682,
 683, 685, 688, 689, 690,
 691, 692, 694
 Barzilay, I., 341
 Baserga, R., 184
- Bases, R. E., 743
 Basford, R. E., 270, 276,
 279, 655
 Basicke, S., 468
 Basilico, C., 707, 711,
 712
 Basinska, J., 340
 Bass, R., 256
 Bass, S. T., 643
 Bassel, B. A., Jr., 239,
 529, 532, 539
 Bassham, J. A., 403, 405,
 407, 411, 412, 413, 414,
 415, 416, 417
 Basu, H., 345, 346
 Batra, P., 403
 Batt, C. W., 121
 Battell, M. L., 641
 Battellino, L. J., 661
 Battay, O., 64, 84, 88
 Bathany, S. T., 478
 Baudhuin, P., 267, 268,
 419, 876
 Bauer, H., 741, 745, 746
 Bauer, S., 654
 Bauer, W., 255
 Baugh, C. M., 861
 Baum, R. H., 327
 Baum, S. G., 734
 Bauman, A. J., 329
 Baumann, K., 664
 Baumann, W. J., 334,
 335, 343
 Bauminger, S., 920
 Baur, E. W., 986
 Bautz, E. K. F., 134,
 136, 139, 144, 146, 165,
 459, 460, 721
 Bautz, F. A., 134, 136,
 146, 459, 460
 Baxter, C. F., 339, 778,
 797
 Baxter, J. H., 331
 Baxter, R., 259
 Bayer, E., 861
 Bayliss, R. S., 117
 Beacham, J., 857
 Beale, D., 986, 988
 Beard, D., 740
 Beard, J. W., 738, 739,
 740
 Beard, M. E., 876
 Bearden, A. J., 692
 Beare-Rogers, J. L., 339
 Bearn, A. G., 627
 Beattie, D. S., 266, 267,
 268, 270, 272, 276, 277,
 279, 371
 Beatty, B. R., 201, 204,
 207, 215, 216
 Beaureau, G., 543, 547
 Beaufoy, H., 625
 Beck, J. C., 519
 Beck, W. S., 297, 309,
 871
 Becka, L. N., 899
 Becker, A., 316

AUTHOR INDEX

- Becker, H. J., 168
 Becker, M. A., 462, 463
 Becker, V. C., 191, 217
 Becker, W., 869
 Becker, Y., 736
 Beckett, A. H., 824, 830
 Beckwith, J. R., 152, 165,
 930, 931, 964
 Bedford, M., 912, 914
 Bedou, D., 517
 Beecher, H. K., 822
 Beer, H., 534, 535
 Beermann, W., 168, 200,
 216
 Beers, R., Jr., 133
 Beesley, T. E., 856, 860
 Beevers, H., 404, 419
 Behles, R. P., 478
 Behrens, O. K., 842
 Beinert, H., 686, 687,
 870, 883
 Beisswenger, P. J., 629
 Bekhor, L., 138, 145, 165,
 167, 174, 175, 966
 Belealim, D., 828
 Bell, E., 217
 Bell, J., 965
 Bell, O. E., Jr., 365
 Bell, P. H., 847
 Bellamy, A. D., 188, 193
 Belleville, J., 380
 Bellingham, A. J., 986
 Bello, J., 64, 65, 68, 69,
 70, 92, 111, 119, 853
 Bello, L. J., 294, 303,
 727, 728
 Bellville, J. W., 824
 Belman, S., 908
 Belocpitow, E., 645, 646,
 650
 Belova, S., 717
 Belozersky, A. N., 186,
 187
 Ben-Abdeljilil, A., 954
 Benacerraf, B., 903, 904,
 905, 907, 908, 910, 911,
 912, 918, 920
 Benassi, C. A., 105, 121
 Bendall, F., 389
 Ben-David, M., 783
 Bender, M. A., 164
 Bender, M. L., 84, 85,
 121
 Bendich, A., 152, 155, 172
 Bendich, A. R., 142, 146
 Benditt, E. P., 113
 Bendovic, S. J., 70
 Benedetti, E. L., 601, 630
 Benedict, C. R., 762, 764
 Ben-Efraim, S., 909
 Benesch, R., 58, 102, 103,
 106, 982, 984, 995, 996,
 1000, 1004, 1005, 1006,
 1012, 1013, 1014, 1023
 Benesch, R. E., 58, 102,
 103, 106, 982, 984, 995,
 996, 1000, 1004, 1005,
- 1006, 1012, 1013, 1014,
 1023
 Benfey, B., 501, 514, 517
 Benhamou, N., 1001
 Benisek, W. F., 115, 849
 Benjamin, J. A., 370
 Benjamin, R., 331
 Benjamin, T. L., 707,
 713, 714, 715
 Benjamin, W., 167
 Benke, P., 813
 Benkovic, S. H., 757, 769
 Bennett, B., 908
 Bennett, D. J., 465
 Bennett, E. O., 325, 326
 Bennett, J. C., 892, 894
 Bennett, J. E., 992, 1028
 Bennich, H., 898
 Ben-Porat, T., 706, 710
 Bensam, A., 484
 Benson, A. A., 382, 403,
 408
 Benson, J. V., Jr., 602
 Benthin, V., 869
 Bentley, K. W., 824, 825
 Bentley, R., 327
 Benyeh-Melnick, M.,
 739, 740, 744
 Beraut, A., 504, 512
 Berde, B., 518
 Berends, W., 868
 Berenson, G. S., 601, 605,
 612
 Berenson, M. P., 984
 Beretta, A., 984
 Berg, P., 108, 133, 719
 Bergamini, E., 653
 Bergelson, L. D., 335,
 369
 Berger, A., 74, 80, 82,
 89, 880
 Berger, R. L., 1018, 1021,
 1033
 Berger, S. J., 664
 Bergeron, M., 276
 Bergersen, F. J., 676
 Berghauser, J., 106, 107,
 111
 Berglund, O., 309, 310
 Bergmeyer, H. U., 654
 Bergquist, A., 430
 Bergstrand, A., 266, 267
 Berken, A., 912
 Berlin, C. M., 932, 934,
 940, 943, 947, 950, 957
 Berlowitz, L., 163, 169,
 176
 Berlyn, M. B., 441
 Berlyne, D. E., 780
 Berman, M., 474, 475,
 481, 488
 Berman, P. H., 953
 Bernard, C., 740
 Bernard, E., 651
 Bernard, W., 201, 202
 Bernardi, A., 238
 Bernardi, G., 238, 314,
- 582
 Bernardis, L. L., 801
 Bernhard, S. A., 70, 73
 Bernheim, F., 835
 Bernheim, M., 835
 Berns, D. S., 35
 Bertani, L. E., 296, 297,
 298
 Bertino, J. R., 944
 Berland, L. H., 27
 Bertman, J., 194
 Bertoli, D., 481
 Bertolini, M., 608
 Bertsch, L. L., 313, 336,
 346, 373
 Bessman, M. J., 187, 293,
 294, 298, 303, 306, 309
 Bessman, S. P., 656
 Bethell, M. R., 58
 Bethge, P. H., 64, 69, 70,
 77, 78, 79, 80, 82, 83,
 117
 Betke, K., 984, 988
 Bettlestone, J., 1009, 1010
 Beauverie, E. C., 114
 Bevill, R. D., 376
 Bewley, T. A., 109
 Beychok, S., 875, 895, 987,
 995, 998
 Beyerman, 862
 Beyreuther, K., 113, 114
 Bezkorovainy, A., 601, 603,
 605, 612
 Bhargava, A. S., 626
 Bhargava, P. S., 769, 770
 Bhattacharyya, A. K., 617
 Bhavanandan, V. P., 608,
 614, 615
 Bhet, N., 512
 Bhoyroo, V., 615, 616, 617,
 624
 Bickerstaffe, R., 364
 Bicknell, J., 142
 Bidwell, R. G. S., 412,
 415, 416
 Bieber, L. L., 338, 343,
 346
 Biederbick, K., 760
 Bielka, H., 184, 188, 217
 Biely, P., 654
 Biemann, K., 244, 246
 Bier, C. J., 65
 Biggs, P. M., 736
 Bigley, R. H., 660
 Bignardi, C., 601, 613,
 615
 Bihler, E., 565
 Billbrey, R., 77
 Billeter, M. A., 237, 238,
 243, 245, 531, 532, 541,
 542, 543, 546
 Billheimer, F. E., 254,
 712
 Bils, R. F., 411
 Birbeck, M. S. C., 623
 Birchall, T., 770
 Bird, I. F., 415
 Bird, J. G., 823

- Birkmayer, G. D., 272
 Birktoft, J. J., 64, 65, 68,
 69, 70, 72, 85, 87, 117,
 123
 Birnbaum, J., 772
 Birnbaumer, L., 645, 646,
 649, 650
 Birnboim, H. C., 144, 192
 Birnstiel, M. L., 143, 146,
 148, 174, 176, 178, 188,
 201, 202, 205, 213, 214,
 215, 216, 219, 256
 Biro, G., 842
 Birshtein, B., 893, 896
 Bishara, E., 369
 Bishop, D. H. L., 233
 243, 245, 259, 545, 546,
 547, 548, 551
 Bishop, H. L., 217
 Bishop, J., 802
 Bishop, J. D., 141
 Bishop, J. O., 145
 Bishop, J. S., 447, 448,
 645, 650, 652, 653
 Bishop, W. H., 67
 Biswal, N., 739, 740, 744
 Biswas, C., 297, 309
 Bittensky, M. W., 650
 Bixler, E. J., 521
 Bjorkman, O., 416, 420
 Black, C. C., 402
 Black, P. H., 601, 630,
 706, 709, 714, 715, 717,
 720, 722, 723, 730
 Black, S., 875
 Black, W. J., 641, 642
 Blackstein, M. E., 706
 Bladen, H. A., 612
 Blair, C. D., 740
 Blair, D. G., 254
 Blair, P. B., 740
 Blake, A., 194
 Blake, C. C. F., 64, 65,
 66, 69, 70, 73, 111
 Blake, D. E., 832
 Blake, R. C., 935, 958,
 967
 Blakley, R. L., 295, 298,
 871
 Blanchard, M., 876
 Blanco, A., 661, 662
 Blane, G. F., 824, 826
 Blank, M. L., 334, 335,
 341, 342
 Blaschko, H., 877
 Blaschkowski, H. P., 771
 Blass, J. P., 813
 Blatt, L. M., 652
 Blatt, W. F., 662
 Blatteis, C. M., 662
 Blecher, M., 650, 663
 Bleicher, M. A., 478
 Blessing, J., 533
 Blew, D., 229, 230
 Bleyman, M., 211
 Blobel, G., 969
 Bloch, K., 327
 Block, J. B., 806
 Blodel, G., 184, 185
 Blomback, B., 610
 Bloom, B. R., 908
 Bloom, F. E., 791
 Bloth, B., 891, 897
 Blout, E. R., 998
 Blow, D. M., 63-100; 64,
 65, 68, 69, 70, 72, 83,
 84, 85, 86, 87, 88, 115,
 117, 119, 123, 467, 474
 Blum, J. J., 485
 Blumberg, B. S., 628
 Blumberg, H., 823
 Blumberg, W. E., 55, 56,
 990, 991, 992, 1036
 Blum-Emericque, L., 551
 Blumenfeld, O., 601, 629
 Blumer, M., 326, 328, 332
 Boak, J. L., 911
 Boardman, N. K., 260,
 389, 390
 Bobinski, H., 593
 Bocchini, V., 647
 Boch, R., 331
 Bock, R. M., 184, 188,
 229, 455, 456, 967
 Bodanszky, M., 842, 850,
 851, 852, 855, 860, 861
 Bodlaender, P., 117
 Bodmer, W., 166
 Boedeker, H., 192, 193,
 210, 529, 530
 Boeker, E. A., 27, 35
 Boesman, M., 910
 Bognolo, D., 877
 Bogoroch, R., 200, 965
 Bohak, Z., 601
 Bohne, M., 618, 622
 Boiron, M., 209, 211,
 733, 739, 740, 744, 745,
 746
 Boissier, J. R., 835
 Boissonnas, R. A., 859
 Bojorski, T. B., 939
 Bojer, J., 506, 509, 510,
 511
 Boles, M. O., 92
 Bolle, V. W., 478
 Bolle, A., 140, 301, 311
 Bollum, F. J., 133
 Bolognesi, D. P., 740
 Bolton, E. T., 133, 140,
 141, 144, 147, 195, 294
 717
 Bolton, W., 56, 57
 Boman, H. G., 199
 Bonacci, M. L., 37
 Bonanou, S., 194, 217
 Bonar, R. A., 739, 740
 Bonaventura, J., 985, 986,
 1005, 1016, 1030
 Bond, H. E., 177
 Bongiorno, M., 967
 Bonhoeffer, F., 194
 Bonifas, V. H., 728
 Bonnemere, C., 760, 770
 Bonner, J., 114, 138, 143,
 145, 151, 155, 162, 165,
 167, 170, 171, 172, 173,
 174, 175, 176, 184, 187,
 714, 966
 Bonnycastle, D. D., 825
 Bonnell, R. W., 593
 Bonnen, P. P. M., 336,
 346, 369, 370, 373
 Bonsignore, A., 969
 Boos, W., 587
 Borders, C. L., Jr., 77,
 111, 117
 Borek, E., 201
 Borek, F., 908, 909
 Borenfreund, E., 152, 155,
 172
 Borison, H. L., 822
 Bernstein, I., 603, 605
 Bernstein, P., 612
 Borovas, D., 848, 849
 Borrbaek, B., 655, 656,
 954
 Borst, P., 253, 254, 255,
 263, 264, 271, 541, 542,
 543, 546, 547
 Borun, T. W., 145
 Bos, C. J., 378, 601, 630
 Bose, S. K., 311, 312, 314,
 315
 Boshouwers, F. M. G., 381
 Bosmann, H. B., 279, 722
 Bosser, H., 843, 847, 849,
 850
 Botchan, M., 151-82; 154,
 171
 Botha, M. C., 986
 Bothe, H., 870
 Bouchilloux, S., 622
 Boura, A. L. A., 824,
 826
 Bourali, M. F., 721
 Bourrillon, R., 601
 Bousquet, W. F., 829
 Bowen, C. E., 770
 Bowen, D. M., 324
 Bowen, J. M., 713
 Bowers, C. Y., 501, 502,
 504, 505, 506, 507, 508,
 509, 510, 511, 512, 513,
 514, 515, 516, 517, 518,
 519, 520, 521, 522, 822
 Bowyer, F., 578
 Boyd, J. W., 477
 Boy de la Tour, E., 301
 Boyden, S. V., 912
 Boyer, P. D., 102, 103,
 371, 392, 393, 661, 758,
 764
 Boyer, S. H., 662, 992,
 1028
 Brachet, J., 200
 Bradbeer, J. W., 403
 Bradbury, J. H., 112
 Bradbury, S. L., 111
 Bradham, G. B., 483
 Bradley, A., 233, 245

AUTHOR INDEX

- Bradley, D. E., 529
 Bradley, D. F., 133
 Bradley, T. B., 989,
 998
 Bradshaw, R. A., 78,
 83, 103, 111,
 122
 Brady, A. H., 875
 Brady, R. O., 813
 Brain, M. C., 984
 Brake, J. M., 121
 Brammar, W. J., 431,
 436
 Bramwell, M. E., 964
 Brand, K., 110, 660
 Brandenburg, D., 69
 Brandt, A. E., 362
 Brandt, I. K., 253
 Branton, P. E., 709
 Bratvold, G. E., 447, 448,
 642, 643
 Braukmann, R., 822
 Braun, J. T., 964
 Braun, P. E., 324
 Braum, R., 258
 Braunitzer, G., 113,
 114
 Braverman, A. S., 952
 Braverman, G., 187
 Braxton, H. P., 64, 69, 83,
 87
 Bray, B. A., 601, 604, 608,
 615
 Bray, R. C., 870
 Brdiczka, D., 267, 268, 279
 Breckenridge, B. M., 607
 Breckenridge, W. C., 333,
 340
 Breidenbach, R. W., 419
 Bremer, H., 69, 197,
 198
 Bremer, J., 267, 268
 Bremmermann, H. J., 474
 Brennan, P. J., 337, 347
 Brenner, D. J., 140, 141
 Brenner, R. R., 336
 Brenner, S., 244, 301
 Breslow, E., 998
 Bresnick, E., 730, 938
 Bressler, R., 372, 449
 Bretscher, P. A., 921
 Breugnon, M., 551
 Brew, K., 94, 458, 459,
 625, 941
 Brewer, C. F., 108
 Brewer, E. N., 256
 Brewer, H. B., Jr., 847,
 848
 Brian, B. L., 329
 Bricas, E., 842
 Brierley, G., 281
 Briggs, G. E., 489
 Brihel, R. W., 1034
 Brill, A. S., 994
 Brimacombe, J. S., 617
 Brimacombe, R. L. C.,
 217, 240
 Brimhall, B., 986, 988
 Brindley, D. N., 382
 Brinkhoff, O., 69
 Brinton, C. C., Jr., 534,
 535
 Britten, R. J., 135, 136,
 137, 138, 142, 145, 146,
 175, 177, 195, 294, 931,
 966
 Britton, H. G., 647
 Brobeck, J. R., 517
 Broberg, P. L., 683, 684
 Brock, T. D., 630, 809
 Brockerhoff, H., 333
 Brockman, R. W., 570
 Brodeck, U., 458, 459
 Brodetsky, A. M., 741
 Brodie, A. F., 327, 684
 Brodie, B. B., 649,
 832
 Brodie, T. M., 649, 833
 Bromer, W. W., 69, 842
 Bronk, J. R., 265
 Brooke, G. S., 855
 Brookes, P., 240
 Brooks, C. J. W., 324
 Brooks, J. W., 832,
 833
 Brostrom, M. A., 447
 Brot, N., 461, 462
 Brown, A. B., 345
 Brown, A. D., 336
 Brown, B. L., 647
 Brown, B. S., 327
 Brown, C. B., 935
 Brown, C. M., 330
 Brown, D. D., 201, 202,
 205, 209, 212, 213, 214,
 215, 217, 219
 Brown, D. H., 263, 279,
 447, 647
 Brown, D. M., 93, 107,
 189
 Brown, F., 188, 189,
 302
 Brown, G. L., 192
 Brown, G. M., 188, 189,
 190
 Brown, J. S., 656
 Brown, J. D., 371
 Brown, J. G., 647
 Brown, J. M. A., 407, 408
 Brown, J. R., 109
 Brown, L. C., 788
 Brown, M., 720
 Brown, N. B., 447, 448
 Brown, N. C., 296, 297,
 312
 Brown, N. E., 644, 645
 Brown, P. K., 59
 Brown, R. E., 259
 Brown, R. H., 400, 403
 Brown, S. W., 164, 167
 Brown, W. J., 881
 Browne, W. J., 94
 Brownlee, G. G., 195, 209,
 210, 217, 218, 230, 231,
 232, 235, 236, 238, 239,
 240, 241, 244
 Brownstein, B. L., 199,
 536
 Bruchovsky, N., 965
 Brueckner, D. A., 84
 Brugger, M., 843, 847
 Bruce, T. C., 70, 71, 73,
 77, 118, 757, 769
 Bruley, D. F., 485
 Brumby, P. E., 878, 879,
 881, 883
 Brummer, W., 760
 Brunel, C., 659
 Brunfeldt, K., 862
 Brunner, G., 267, 268, 276
 Brunngraber, E. G., 809
 Brunori, M., 977-1042; 57,
 58, 106, 878, 879, 984, 990,
 991, 993, 994, 995, 996, 1002,
 1004, 1006, 1007, 1008, 1009,
 1010, 1011, 1012, 1013, 1014,
 1015, 1016, 1018, 1019, 1020,
 1021, 1022, 1023, 1024, 1026,
 1027, 1030, 1031, 1032, 1033,
 1034, 1036
 Bruns, G. P., 187
 Brusch-Heriad, M., 690, 693,
 694, 695
 Brutlag, D., 176
 Bruton, C. J., 27,
 114
 Bruzzesi, M. R., 878, 879
 Bryan, P., 644
 Bryne, R. W., 244
 Buc, J., 477
 Bucci, E., 993, 996, 997, 999,
 1003, 1004, 1010, 1013,
 1014, 1015, 1022, 1031
 Buchanan, B. B., 413, 415
 Buchanan, D. L., 943
 Buchanan, J. M., 12, 13,
 301, 302, 303
 Bücher, T., 272, 277,
 279
 Buchnea, D., 346
 Buck, C. A., 200, 263
 Bucke, C., 411, 412, 413,
 414, 415, 417
 Buckley, E. C., III, 897
 Buckley, J., 661
 Buddecke, E., 608, 626
 Budnick, L. E., 957
 Budowsky, E. I., 240, 241
 Budreau, A., 584
 Buecher, T., 367, 371
 Bueding, E., 654
 Bueker, E. D., 806
 Buell, M. V., 877
 Bugbee, E. P., 505, 506,
 517
 Bull, T. A., 404, 405
 Buller, C. S., 373
 Bullock, T. H., 781, 782,
 783, 786
 Bunge, M. B., 791
 Bunge, R. P., 791

- Bunkenberg, J., 401
 Bunney, W. E., Jr., 813
 Burawoy, A., 105
 Burd, G. I., 567
 Burdick, C. J., 162
 Burdon, R. H., 188, 189
 Burdon, R. M., 541, 542,
 543, 546
 Burger, M. M., 721, 722
 Burgess, R. R., 165, 459,
 460
 Burgess, W. H., 869
 Burgner, J. W., 990
 Burgoyne, G. H., 736
 Burgoyne, L., 439, 440
 Burgess, R. R., 721
 Burgus, R., 499-526; 502,
 503, 504, 505, 506, 507,
 508, 509, 510, 512, 513,
 514, 519, 522
 Burks, T. F., 835
 Burleigh, B. D., Jr., 873
 Burleigh, I. G., 656
 Burlingham, B. T., 706, 726
 Burmester, B. R., 736
 Burnet, F. M., 747, 903
 Burnett, J. P., 725
 Burns, J. A., 474
 Burns, J. S., 960
 Burns, W. H., 715,
 720
 Bernstein, Y., 109
 Burny, A., 145
 Eurokas, S., 630
 Burr, G. O., 404, 405
 Burr, H. E., 177
 Burris, R. H., 396, 689,
 690
 Burton, D., 759
 Burton, D. N., 455, 456,
 937
 Burton, K., 315, 409, 446
 Burton, N., 826
 Burton, R. M., 349
 Burwell, R. G., 915
 Busch, H., 201, 202, 203,
 207
 Busch, W., 443, 444
 Bush, C. A., 192, 193, 194
 Busillo, E., 217
 Busse, D., 337
 Busser, J., 474
 Bustin, M., 170, 173
 Butcher, F. R., 649
 Butcher, R. W., 640, 649,
 650, 651, 806, 956
 Butel, J. S., 734
 Butler, C., 75
 Butler, J. A. V., 170
 Butler, L. G., 68, 409
 Butler, P. J. G., 27, 101,
 102, 113, 114
 Butler, W. T., 601, 608,
 612
 Butterworth, P. H. W., 327,
 328, 455, 456
 Buttin, G., 578, 583
 Bygrave, F. L., 270, 279,
 367, 371
 Byington, K. H., 266, 268,
 371
 Bynum, E., 116
 Byrne, W. L., 377, 655,
 937
 Byrt, P., 905
 C
 Cabib, E., 644
 Cabrera, M., 349
 Caccam, J. F., 374
 Caffier, H., 728
 Cahill, C. L., 601
 Cahill, G. F., 13
 Cairns, J., 159, 162, 213,
 712
 Calissano, P., 806
 Callahan, F. M., 860
 Callan, H. G., 215, 218,
 219
 Callendar, J., 718
 Calo, N., 411
 Calvin, M., 403, 405, 408,
 411, 417
 Cambie, R., 857
 Campbell, D. H., 899, 901
 Campbell, H. J., 511, 512
 Campbell, I. M., 327, 330,
 332
 Campbell, L. L., 693
 Campbell, P. N., 271
 Campos, J. O., 660
 Canellakis, Z. N., 296, 297
 Cannon, J. R., 486
 Cannon, M., 260
 Cantau, B., 659
 Cantor, C. R., 210, 243,
 995, 1031
 Cantor, K. P., 152, 153, 158,
 160
 Cantwell, R., 662
 Capocchi, M. R., 532, 537,
 538, 540, 541, 549
 Capindale, J. B., 410, 414
 Capitan, A. I., 268
 Capitow, M., 768, 769, 770,
 771
 Cappechi, M., 930, 931,
 964
 Capps, W. I., 738, 740
 Caputo, A., 978, 979, 996,
 999, 1000, 1002, 1007,
 1008, 1011, 1012, 1030,
 1034
 Card, G. L., 338, 373
 Cardiff, R. D., 740
 Cardini, C. E., 447
 Carlisle, C. H., 92
 Carlson, D. M., 458, 601,
 602, 603, 604, 606, 607,
 608, 614, 621
 Carlson, F. D., 778
 Carlton, B. C., 431, 432,
 436
 Carmeli, C., 392, 395
 Carminitti, H., 447, 660,
 661
 Carnahan, J., 534
 Carnay, L., 789
 Carnevali, F., 282
 Caro, L. G., 534, 622
 Caron, G. A., 909
 Carp, R. L., 711, 713,
 717
 Carr, H. S., 296
 Carraway, K. L., 84, 117
 Carrell, R. W., 984, 985,
 988
 Carroll, D., 171
 Carroll, D. M., 963
 Carroll, K. K., 329, 336,
 347
 Carroll, W. R., 443, 444,
 445
 Carsiotis, M., 438
 Carsten, M. E., 601, 908
 Carter, C. E., 294
 Carter, H. E., 343, 348,
 349, 350
 Carter, J. R., 578, 579,
 580
 Carter, J. R., Jr., 362
 Cartt, R. P., 122
 Carubelli, R., 608
 Casanello, D., 651
 Cascales, M., 660
 Case, K. R., 279
 Case, M. E., 165, 439, 440
 Casey, J., 257
 Casey, K. L., 805
 Casey, M. J., 717, 730
 Casola, L., 877
 Caspar, D. L. D., 533
 Caspary, W. R., 664
 Caspersson, T., 200
 Cassani, G., 133
 Cassidy, J. T., 602
 Cassingena, R., 721
 Cassoly, R., 991, 1009,
 1011, 1015, 1031, 1036
 Castellani, A. A., 601, 613,
 615
 Castelnuovo, G., 329
 Castillo, F., 662
 Castor, L. N., 681, 683,
 684, 685
 Caswell, A. H., 394
 Casy, A. F., 824, 830
 Cathou, R. E., 895, 899
 Catley, B. J., 601, 602,
 603, 605, 611, 612
 Caughey, W. S., 990, 992,
 1028
 Cavadore, J. C., 121
 Cavallieri, L. F., 136
 Cavard, D., 380
 Cavins, J. F., 108
 Cazzulo, J. J., 763

AUTHOR INDEX

- Cebra, J. J., 893, 896, 906, 907
 Ceccarini, C., 184
 Cecil, R., 102, 103
 Cehovic, G., 807
 Ceppellini, M., 529, 530
 Cepure, A., 601
 Cerami, A., 313
 Cerbulis, J., 331
 Cerottini, J. C., 912, 914
 Chacko, G. K., 334, 342, 345
 Chadha, J. S., 341, 346, 389
 Chagoya, V., 729, 730
 Chahin, M., 913
 Chai, H. G., 243
 Chalet, L., 772
 Chaiken, I. M., 107, 123
 Chakraborty, K. P., 294
 Chakravorty, A. K., 209
 Chalkey, R., 162, 167
 Chalkley, G. R., 965
 Chamberlain, J. W., 395
 Chamberlin, M. J., 133
 Chambers, R. W., 230, 239, 241, 244
 Chan, L. T., 518
 Chan, T.-L., 119, 120
 Chance, B., 473-98; 266, 377, 391, 398, 399, 401, 402, 474, 475, 479, 480, 485, 486, 491, 676, 681, 683, 684, 685, 987
 Chance, E. M., 476, 480, 488, 489
 Chance, R. E., 69
 Chandler, A. M., 950, 954
 Chandler, B. L., 160
 Chandrasekhar, N., 628
 Chang, A. Y., 233, 245
 Chang, H. C., 407, 408, 750, 762, 763, 764, 769, 773
 Chang, S. H., 244
 Chang, S. I., 592
 Changeux, J.-P., 26, 59, 465, 483, 484, 487, 788, 825, 1035
 Chanock, R. M., 717, 730
 Chantrenne, H., 145
 Chanutin, A., 57, 58, 1012
 Chao, F. C., 431, 432
 Chaperon, E. A., 916
 Chapman, D., 789, 797
 Chapman, P. J., 686, 687
 Chappell, J. B., 395
 Charache, S., 986, 990, 992, 1009, 1012, 1016, 1023, 1028
 Charalampous, F. C., 273
 Charette, W. P., 478
 Chargaff, E., 199, 214, 298
 Charlton, H. M., 512, 513, 514
 Charlwood, P. A., 897
 Charret, R., 256
 Chase, M., 303
 Chase, T., 328
 Chassy, B. M., 879
 Chatterjee, G. C., 110
 Chattopadhyay, S. K., 142
 Chauvet, J., 115
 Cheah-Tan, C., 656
 Cheek, W. R., 504, 517, 518
 Cheftel, S., 622
 Chelala, C. A., 643
 Chen, C., 69, 658
 Chen, C. L., 521
 Chen, G. S., 641
 Chen, J. Y., 762
 Chen, S., 643
 Chen, W. L., 273
 Chen, Y., 69
 Chenaille, P., 740
 Cheng, P., 243
 Cherayil, J. D., 229
 Chernavskii, D. S., 484
 Chernov, H. L., 826
 Cherry, W. B., 329
 Chesebro, B., 891, 897
 Chesterton, C. J., 456
 Chevalley, R., 301
 Chiancone, E., 27, 878, 879, 998, 999, 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1018, 1020, 1026, 1027, 1034, 1036
 Chiarugi, V. P., 144
 Chignell, D. A., 27, 39
 Ch'in, J. J., 257
 Childs, B., 813
 Chilisova, V., 717
 Chillemi, F., 854
 Chiller, J. M., 917, 920
 Ching, S. W., 489
 Chipchase, M. I. H., 213
 Chipman, D. M., 75, 76, 77
 Chipowsky, S., 626
 Chisholm, M. J., 330
 Chiu, C.-S., 309
 Chiu, T. H., 374, 376
 Cho-Chung, Y. S., 934, 957
 Choi, T. K., 899
 Chorazy, M., 152, 155
 Chou, J., 582
 Chowers, I., 518
 Chown, H. B., 15
 Christen, P., 103, 119, 658
 Christensen, A. K., 965
 Christensen, H. N., 565
 Christenson, J. G., 376
 Christie, W. W., 332, 333
 Christodoulou, C., 275
 Chu, L. L. H., 945
 Chuat, J., 733
 Chubb, R. C., 736
 Chun, E. H. L., 255
 Chun, P. W., 41, 482
 Chung, A. E., 104
 Chung, C. W., 869
 Chung, V., 518
 Church, R. B., 131-50; 138, 142, 143, 144, 145, 147
 Churchill, A. E., 736
 Clani, S., 395, 414
 Clifton, J. A., 612, 614, 616, 627
 Cirillo, V. P., 562
 Citarella, R. V., 140, 141
 Civen, M., 935, 957
 Claflin, A., 661
 Clamen, H. N., 918
 Clamp, J. R., 601, 602, 603, 604, 605, 606, 609, 612, 615, 618
 Claridge, G. S., 780
 Clark, A. F., 374
 Clark, B. F. C., 244
 Clark, J. M., 233, 245
 Clark, P., 489
 Clark, W. M., 871
 Clarke, G. B., 324
 Clarke, J. B., 647
 Clarke, N., 346, 368
 Clarke-Walker, G. D., 271
 Clasen, R. J., 491
 Clausen, J., 663
 Clauser, H., 608, 615
 Claybrook, J. R., 546
 Clayton, D. A., 253, 255, 282
 Clayton, R. B., 324
 Clayton, R. K., 399
 Clegg, J. B., 986
 Cleland, W. W., 360, 476, 488, 490, 491, 660, 869
 Clement, J., 380
 Clendinnen, B. G., 806
 Click, R. E., 184, 188
 Clift, J. W., 831
 Cline, A. L., 967
 Cline, M. J., 876
 Clouet, D. H., 821, 826, 827, 828, 829
 Coates, J. H., 40
 Cochin, J., 822, 823, 829, 830, 831
 Cockburn, W., 403, 411, 412, 413, 414, 415, 417, 419
 Cockrell, R. S., 391
 Coffey, D. S., 869, 878, 879, 880, 881, 882, 883
 Coffey, R. G., 459
 Coggins, J. H., 718
 Cohen, A. I., 503, 514, 515, 516
 Cohen, A. L., 36
 Cohen, G. H., 64, 69, 83, 87
 Cohen, G. N., 431, 437, 441, 463, 464, 570, 578
 Cohen, J. S., 94, 112
 Cohen, L. A., 101, 104, 108, 110, 112, 118, 119
 Cohen, L. B., 789
 Cohen, M., 830, 831
 Cohen, P. P., 768, 941, 946

- Cohen, S. S., 298, 300, 301, 302, 303, 305, 309, 713
 Cohn, G. L., 253
 Cohn, M., 661, 890, 921
 Cohn, M. L., 873, 874
 Coifman, R. E., 646
 Colbeau, A., 268
 Colburn, R. W., 813
 Cole, A., 169
 Cole, L. J., 917, 918
 Cole, R. D., 151, 155, 169, 170, 173, 601, 628, 849, 966
 Coleman, D. L., 951, 952, 962, 963
 Coleman, J. E., 77, 78, 82, 83
 Coleman, J. R., 163
 Coleman, P. D., 800
 Coleman, R., 382
 Coleman, R. D., 985
 Coletti-Previero, M. A., 121
 Colli, W., 214, 219
 Collier, H. O. J., 831
 Collins, A., 813, 939, 946, 961
 Collins, D. M., 1029
 Collins, J. M., 456, 937
 Colloms, M., 58, 115
 Colman, R. F., 104, 121, 875
 Colowick, S. P., 27, 656, 659
 Colthart, L., 546
 Colucci, A. V., 654
 Colucci, D. F., 847
 Colvill, A. J. E., 460, 729
 Comb, D. G., 209, 213, 217
 Comings, D. E., 163, 169
 Comorosan, S., 265
 Conant, J. B., 12
 Conchie, J., 625
 Condrea, E., 379
 Conn, J. B., 856
 Connel, G. E., 601
 Connellan, J. M., 104
 Connelly, C. M., 485
 Connell, S. L., 601
 Conney, A. H., 960
 Connolly, T. N., 413
 Conrad, H. E., 686, 687
 Consigli, R. A., 709
 Conti, S. F., 337, 347
 Contractor, S. F., 793, 794
 Conway, T. W., 460, 461, 462
 Cook, G. M. W., 619, 622
 Cooke, N. R., 729
 Coombs, J., 403, 419
 Coombs, T. L., 77, 82
 Coon, H. G., 940
 Coon, M. J., 26, 661, 759
 Cooney, J. J., 328
 Cooper, A., 64
 Cooper, A. G., 117, 890
 Cooper, C., 267
 Cooper, M., 380
 Cooper, R. A., 409, 416, 447, 642
 Cooper, S., 532, 536, 540, 544, 550
 Cooper, T. G., 762, 764
 Coote, J. L., 253, 272, 275
 Copley, M., 656
 Copp, D. H., 847
 Coppen, A., 813
 Copper, I., 483
 Coppelson, L. W., 915, 918
 Coppola, J. C., 65, 69, 70, 77, 78, 79, 80, 82, 83, 117
 Corbin, J. D., 447, 642
 Cordes, E. H., 591
 Cordonnier, C., 314, 582
 Corey, R. B., 69, 84, 88
 Cori, C. F., 447, 880
 Cori, G. T., 447
 Cornblath, M., 644
 Corneo, 254, 255
 Cornwell, D. G., 335
 Corradino, R. A., 592
 Corrado, A. P., 832, 834
 Corrigan, J., 875, 876
 Corrodi, H., 813, 833, 834
 Corsi, A., 119
 Cory, S., 244
 Cozmanatos, A., 848, 849
 Costa, P. J., 825
 Costa, S., 1024
 Coto, C., 706
 Cotran, R. S., 912
 Cottam, G. L., 26, 661
 Cotter, R. L., 192, 194
 Cotton, F. A., 65
 Cotton, R. G. H., 441
 Cotzias, G. C., 813
 Couchoud-Beaumont, P., 457
 Countryman, R., 1029
 Courier, R., 511
 Courtous, J. E., 602
 Covelli, L., 112
 Cowans, J. L., 913
 Cowie, D. B., 141, 294
 Cox, B. M., 824, 828, 830, 835
 Cox, D. J., 430, 431, 442, 443, 445, 446, 466, 873
 Cox, J. M., 52, 53, 56, 57, 58, 106, 979, 980, 981, 1030, 1034
 Cox, J. A., 185, 192, 193, 194
 Cox, R. P., 944
 Cozzzone, A., 954
 Craddock, C. G., 644
 Cragg, B. G., 800
 Craig, J. W., 651
 Craig, L. C., 107, 890, 999, 1006
 Craig, N. C., 206
 Crain, S. M., 791
 Cramer, J. H., 536
 Cramer, R., 707
 Cramer, R. D., 12
 Crampion, C. F., 205
 Crandall, M. A., 630, 809
 Crane, R. K., 565, 664
 Craven, P. A., 655
 Crawford, E. J., 297
 Crawford, E. M., 534
 Crawford, I. P., 431, 432, 433, 434, 436
 Crawford, L. V., 705, 706, 707
 Crawford, T. H., 116
 Creaser, E. H., 464, 465
 Creighton, T. E., 431, 432, 433, 434, 436, 437
 Crestfield, A. M., 92, 107, 111, 112, 123, 434
 Creutzfeldt, O., 781, 782, 783, 786, 787, 790
 Criddle, R. S., 278, 279, 662
 Crifo, C., 877
 Crighton, D. B., 517
 Crighton, G. W., 737
 Crippa, M., 143, 145
 Crocco, R. M., 965
 Crofts, A. R., 389-428; 389, 392, 393, 394, 395, 396, 397, 398, 399, 401, 402
 Cronan, J. E., Jr., 338, 362
 Cronenwett, C. S., 430
 Cronin, J. R., 870
 Crookston, J. R., 988
 Crosbie, G. W., 292
 Cross, A. M., 903
 Cross, B. A., 782, 783, 785
 Crothers, D. M., 133
 Crout, J. R., 649
 Crowther, R. A., 106, 981, 1011, 1012, 1030, 1031
 Cryer, P. E., 650
 Casaregh, L., 868
 Cuatrecasas, P., 118, 119, 122, 859
 Cudkowicz, G., 917
 Culbertson, C. G., 722
 Cullen, G. E., 6
 Cullis, A. F., 36, 69
 Cummings, R. B., 334, 342
 Cummins, J. E., 280
 Cunliffe, T. L., 964
 Cunningham, A., 917
 Cunningham, B. A., 114, 609, 610, 628, 893, 894, 896, 898
 Cunningham, D., 69
 Cunningham, L. W., 84, 85, 102, 601, 607, 608, 610
 Curgy, J.-J., 265
 Curnish, R. R., 57, 58, 1012
 Currell, D., 1003
 Curti, B., 877, 878, 879

AUTHOR INDEX

- Curtis, A., 475, 489
 Curtis, A. S. G., 808
 Curtis, J. L., 949
 Cusanovich, M. A., 681,
 686, 689, 690, 692, 694
 Cutler, R. G., 140, 214
 Cutts, J. H., 329, 336, 347
 Cuzin, F., 183, 719
 Cuzner, M. L., 270
 Cynkin, M. A., 411, 623
 Czerlinski, G., 84
- D
- Dacie, J. V., 984
 Dagg, C. P., 951, 952,
 962, 963
 Dagley, S., 199
 Dahlberg, J. E., 234, 237,
 238, 243, 245, 530, 531,
 532
 Dahlquist, F. W., 77, 111,
 117
 Dahlström, A., 833, 834
 Dahmus, M. E., 151, 155,
 173
 Dakshinamurti, K., 656, 757
 Daley, K., 460
 Dalidowicz, J. E., 109
 Dallner, G., 948
 Damadian, R., 584, 588
 Damjanovich, S., 641
 Damle, V., 133
 Dan, K., 172
 Dancis, J., 813, 953
 Dane, E., 844
 Daneholt, B., 207
 Danes, B. S., 627
 Danford, W. H., 646
 Dankert, M., 374, 375
 Danowski, T. S., 876, 877
 Dantzig, G. B., 483, 492
 Danziger, R. E., 534, 535
 Derbyshire, J. H., 722
 D'Arti, L., 204
 Darian-Smith, I., 781, 782,
 786
 Darnall, D. W., 25-62; 58,
 467
 Darnell, J. E., 144, 145,
 147, 185, 188, 189, 201,
 202, 204, 206, 207, 208,
 209, 212, 217, 280
 Darnell, J. E., Jr., 931,
 966
 Darvey, I. G., 487
 Das, G. D., 813
 Dastoli, F. R., 787
 Datta, A., 282
 Daullard, F., 906
 Daume, M., 1001
 Davern, C. L., 529, 550
 Daves, G. D., 327
 Davey, P. J., 274, 278
 David, J. R., 908, 909,
 910, 914
 Davidoff, R. A. 876
- Davidson, B. E., 659
 Davidson, E. A., 616, 617
 Davidson, E. H., 142, 143,
 145, 162, 175, 177, 215,
 966
 Davidson, N., 136, 137
 Davidson, R. G., 167
 Davie, J. M., 891
 Davies, A. J. S., 916, 917
 Davies, A. P., 341
 Davies, D. R., 64, 69, 83,
 87, 898, 899
 Davies, H. G., 169
 Davies, J. T., 649
 Davies, M. C., 847
 Davies, R. C., 116
 Davis, C. H., 840
 Davis, D. G., 990, 1009
 Davis, H. F., 616
 Davis, J. E., 543
 Davis, John M., 813
 Davis, K. A., 282
 Davis, L., 27
 Davis, M. A., 515
 Davis, R. W., 122
 Davis, T. Q., 504
 Davis, W. E., Jr., 917
 Dawson, A. N., 270
 Dawid, I. B., 187, 212,
 215, 254, 255, 259, 263
 Dawson, D. M., 28, 646,
 662
 Dawson, G., 601, 602,
 604, 605, 606, 609, 612,
 615, 618, 627
 Dawson, R. M. C., 346, 368,
 369, 370, 371, 382, 827,
 828
 Day, P. R., 419, 420
 Dayhoff, M. O., 56, 693,
 890, 891, 893, 894
 Dayton, H. B., 823
 Deak, J. F., 856
 Deal, W. C., Jr., 27, 659,
 661
 Deamer, D. W., 394, 395,
 396, 399
 Deanin, G. G., 810
 Deavin, A., 93
 DeBellis, R. H., 167
 de Bernard, B., 270, 276
 De Bodo, R. C., 822
 Debuch, H., 346
 De Crombrugge, B., 567,
 581, 950
 de Duve, C., 267, 268,
 381, 419, 625, 876, 947,
 969
 Deeb, S. S., 680, 682
 Deer, A., 850
 Defendi, V., 707, 709,
 714
 De Flora, A., 969
 Defots, L. J., 847, 848
 De Gardihe, M., 518
 Deghenghi, R., 341
 de Graaf, M. J. M., 68, 89
- de Haas, G. H., 342, 380,
 574
 DeHauwer, G., 144
 DeHaven, J. C., 483, 492
 Deichman, G. I., 717
 Deinema, M. H., 347
 De Jong, R. N., 784
 de Jong, W. F., 16
 de Klerk, H., 121, 673,
 674, 678, 688, 689, 690,
 691, 692, 694
 de Kok, A., 26, 869, 877
 DeLaage, M., 84
 de la Haba, G. L., 930, 948
 De la Lande, I. S., 828
 de la Llosa, P., 504, 514
 DeLaMorena, E., 660
 DeLand, E. C., 474, 475,
 483, 488, 492
 Delaney, R., 610, 628, 893,
 896
 DeLange, R. J., 83, 88, 114,
 171, 172, 173, 176, 447,
 605, 610, 612, 642, 643,
 648
 Delbaufte, D., 380
 Del Campo, F. F., 400,
 403
 De Leo, T., 257
 De Leon, A., 938, 946
 Delihas, N., 194
 Delius, H., 200, 541, 544
 Delpierre, G. R., 117
 De Luca, D. C., 881, 882
 DeLuca, H. F., 965
 De Maeyer, L., 1021
 de Man, J. M., 334
 de Marchi, W. J., 876
 de Marco, C., 877
 de Margerie-Hottinger, H.,
 275
 DeMars, R., 813, 944
 DeMartinis, F. D., 378
 DeMoss, J. A., 260, 437,
 438, 457
 Deneau, G. A., 821, 822,
 827, 829, 833
 Denhardt, G. H., 301
 Denis, G., 822
 Denis, H., 142, 144, 145
 Denkewalter, R. C., 69,
 855, 856, 860
 Dennert, G., 374, 442,
 443, 445
 Dennis, E. A., 93, 94
 Denton, W. L., 458
 De Petris, S., 551
 Deppe, G., 374, 442, 443,
 444, 445
 Derechin, M., 27, 105,
 106
 De Renzo, E. C., 1004,
 1014
 der Kaloustian, V. M.,
 813
 DerVartanian, D. V., 869
 DeSa, R. J., 482, 878

- DeSalle, L., 254
 Desiderio, D., 503, 508,
 509, 510, 522
 Desjardins, R., 207
 Desnuelle, P., 83, 954
 DeSombre, E. R., 965
 DeSouza, M. A. B., 918
 De Stefanis, V. A., 347
 de Stevens, G., 821, 827
 DeTar, C. E., 488
 DeTar, D. F., 488
 Determann, H., 842
 DeTorres, R. A., 709, 710,
 712, 717, 730
 Dettori, R., 529, 530
 Deuben, R., 519
 Deuel, T. F., 569, 586, 590
 D'Eustachio, A. J., 870
 Deutscher, M. P., 313
 De Vallet, J., 209
 De Vault, D., 398
 De Verdier, C. M., 1013
 DeVijlder, J. J. M., 659
 Devine, C., 747
 De Vries, A., 256
 de Vries, H., 273
 de Waard, A., 315
 De Wachter, R., 233, 235,
 236, 242, 245, 530, 531,
 532
 De Wael, J., 875
 Dewey, H. K., 948, 949,
 958
 Dewey, R. S., 856, 857, 860
 Dewey, W. L., 835
 DeWolf, S., 300, 305
 DeWulf, H., 644, 645, 646,
 650, 651, 652
 deZalenski, C., 482
 Dhariwal, A. P. S., 512, 515,
 516, 517, 518, 519, 520, 521,
 522
 Diamandopoulos, G. T., 717
 Diamond, M. C., 806
 DiBella, F. P., 109
 Dickens, F., 640
 Dickerson, R. E., 64, 65,
 69, 88, 693
 Dickinson, M. J., 856
 Dickson, R. C., 254
 Dieckmann, M., 719
 Diehl, V., 736
 Dietrich, J., 442, 443, 445
 DiGeorge, A. M., 917, 918
 Di Girolamo, A., 217
 Di Girolamo, M., 217
 Dijk, J., 114
 Dikstein, S., 783
 Dillard, C. J., 625, 627
 Dilley, R. A., 394, 395,
 396, 400, 402, 403
 Dillon, J. F., 327
 Dills, R., 333, 334
 di Mauro, E., 459
 DiMayorca, G., 707, 718
 Di Meo, S., 257
 Dimroth, P., 457
 Dinglinger, F., 347
 Dingman, C. W., 169, 175
 Dingman, W., 217
 Dinning, J. S., 960
 Dinowitz, M., 728
 Dirksen, M.-L. 302, 303
 DiSabato, G., 662
 Dittert, L. W., 770
 Dittmer, J., 573
 Dittmer, J. C., 325, 326,
 337
 Dixon, H. B. F., 113, 114
 Dixon, J., 303
 Dixon, J. F., 591
 Dixon, J. S., 109
 Dixon, M., 873, 876, 877
 Dmochowski, L., 713
 Dobbs, H. E., 826
 Dockner, T., 844
 Doctor, B. P., 244
 Dodge, P. W., 827
 Doepner, W., 518
 Doerfler, W., 708, 726,
 734
 Dohlman, C.-H., 601, 629
 Doi, R. H., 188, 217, 528,
 529, 530, 533, 543, 550
 Doig, A. R., 787
 Dolder, F., 891
 Dole, V. P., 821-40; 826
 829
 Dolbun, J. J., 244, 246
 Dolin, M. I., 327
 Donaldson, G. R., 280
 Donley, J., 378, 592
 Donovan, B. T., 515
 Donovan, E., 297
 Doolittle, R. F., 891
 Dopheide, T. A. A., 120,
 121
 D'Or, R. K., 847
 Dore, E., 136
 Dorfman, A., 616, 622, 623,
 627
 Dorman, L., 861
 Dorrington, K. J., 895
 Doscher, M., 67, 68
 Doty, P., 131, 136, 137,
 145, 192, 193, 482
 Doty, R. W., 783
 Douce, R., 362
 Douglas, L. J., 374
 Douglas, S. D., 912
 Douglas, W. W., 790, 803
 Douraghizadeh, K., 331
 Dournashkin, R. R., 891,
 897
 Doute-Blazy, L., 381
 Douzou, P., 881, 1020
 Dowden, S., 920
 Dowdle, E. B., 9
 Dowell, V. R., Jr., 329
 Downs, F., 611
 Downton, W. J. S., 405,
 408, 416, 417
 Doyen, A., 625
 Doyle, D., 929-76; 270,
 276, 277, 938, 940, 943,
 952, 960, 962, 963
 Doyle, R. J., 119
 Dozy, A. M., 984
 Drapeau, G. R., 431, 432, 436
 Dray, S., 910, 913, 914
 Drees, F., 844, 846
 Drent, J., 64, 65, 69, 70,
 89, 90, 91, 107
 Dresser, D. W., 912, 920
 Dreyer, W. J., 83, 892
 Dreyfuss, J., 583, 584
 Droz, B., 276, 622
 Drucker, H., 693
 Drummond, G. I., 640, 642,
 648, 653
 Dryan, R., 268
 Dryer, W. J., 587
 Drysdale, J. W., 939
 Drysdale, R. B., 465
 Du, Y., 69
 Dubbelman, T. M. A. R.,
 339, 360, 364
 Dubbs, D. R., 709, 710, 711,
 712, 717, 721, 730, 944
 Dube, S. K., 244
 Dublin, D. T., 188, 197, 199,
 259
 Dubnau, D., 140, 211, 213,
 214
 Dubois, F., 381
 DuBois, S., 296
 Dubourdieu, M., 870, 871
 Dubovi, E. J., 301, 306,
 308, 309, 310, 312
 DuBus, R., 686, 687
 Du Buy, H. G., 255
 Duckworth, D. H., 303
 Dudock, B. S., 244
 Duesberg, P. H., 740, 741
 Duff, R. G., 738
 Dugas, H., 88
 Duke, A. J., 346
 Duke, F. R., 877
 Dulak, N., 591
 Dubbecco, R., 709, 710,
 711, 712, 713, 714, 715,
 716, 719, 720
 Duncan, I. W., 875
 Duncan, L., 642, 648
 Dundee, J. W., 835
 Dunham, E. T., 591
 Dunitz, J. D., 395
 Dunn, D. B., 188
 Dunn, J. J., 165, 459,
 460, 721
 Dunn, J. T., 601, 603, 605,
 606, 612
 Dunn, T. F., 503, 508,
 509, 510, 522
 Dunne, F. T., 601, 606
 Dunphy, P. J., 327
 DuPraw, E. J., 151, 152,
 160, 161
 Dupuis, B., 657
 Dupuis, G., 857
 Dupuy, J. M., 910

AUTHOR INDEX

- Dure, L. S., 185, 258
 Durell, J., 371
 Durham, L. J., 410
 Durwald, H., 200
 Dus, K., 121, 673, 674, 686,
 688, 689, 690, 691, 692, 693,
 694
 Dutta, S. K., 142
 Duttera, S. M., 377
 Dutting, D., 228, 244
 Dutton, R. W., 911
 du Vignaud, V., 513
 Dvorak, H. F., 570, 969
 Dziobkowski, C., 847
- E
- Eades, C. G., 822, 830
 Eagle, H., 931, 951
 Eagon, R. G., 581
 East, J., 916, 918
 Easterday, R. L., 407, 408,
 764
 Eaton, C. A., 326
 Eaton, R. P., 481
 Eayrs, J. T., 806
 Ebashi, S., 592, 643
 Ebata, M., 123
 Ebel, J. G., 582
 Ebel, J. P., 228
 Eberle, H., 213
 Eberspaecher, H., 992
 Ebisuzaki, K., 302, 303
 Ebner, K. E., 458, 459, 643
 Ebstein, R. P., 194
 Eccles, J. C., 778, 781, 782,
 786, 788, 790, 792
 Eck, R. V., 56
 Eckhart, W., 706, 718
 Eddy, B. E., 714
 Edelhoch, H., 897, 898
 Edelman, G. M., 114, 609,
 610, 628, 890, 891, 892
 893, 894, 895, 896, 897,
 898
 Edelman, I. S., 965
 Edelman, M., 254
 Edelstein, C., 114
 Edelstein, S. J., 40, 41, 999,
 1000, 1001, 1026, 1934
 Edgar, R. S., 275, 301, 309,
 312
 Edgell, M. H., 535
 Edkins, E., 333
 Edman, P., 890, 892
 Edmundson, A. B., 65, 892
 Edsall, J. T., 103
 Edstrom, A., 811
 Edstrom, J. E., 200, 207,
 215, 811
 Edwards, J. B., 758, 763,
 771
 Edwards, J. M., 437
 Edwards, M. J., 986
 Edwards, M. R., 35
 Efron, M. L., 984, 985
 Egami, F., 237, 241, 602,
 626, 679, 857
 Egan, A. F., 437
 Egan, J. B., 562, 567, 580,
 584
 Egdall, R. H., 910
 Eggen, K., 532, 533, 536,
 537, 538, 540, 541, 549
 Eggerer, H., 449
 Eggers, H. J., 705, 706
 Eggleston, L. V., 661, 936
 Eglington, G., 324, 325, 331
 Ehrenberg, A., 482, 692,
 693, 868
 Ehret, C. F., 808
 Ehring, R., 659
 Eibl, H., 362
 Eichel, H. J., 878, 879
 Eichelberger, L., 11
 Eichner, D., 811
 Eidelberg, E., 792
 Eidlic, L., 165, 199
 Eiduson, S., 794
 Eigen, M., 1021
 Eigner, J., 131, 136, 307
 Eikhom, T. S., 459, 544,
 545, 546, 547, 548
 Ein, D., 891, 892
 Eisele, B., 107
 Eisen, H. N., 900, 903,
 908, 909
 Eisenberg, D., 64, 69
 Eisenberg, S., 380
 Eisenman, A. J., 832, 833
 Eisenman, G., 395, 414
 Ekstrand, V., 875
 Elafae, N. R., 260, 262
 Elam, J. S., 313, 314,
 315
 Elbein, A. D., 625
 Elbertzhausen, H., 625
 Eley, D. D., 57
 Elias, J. J., 941
 Eliasson, E. E., 944, 945
 Eliasson, R., 296, 312
 Elceir, G. L., 185, 206
 Elison, C., 829, 830
 Elkort, A. T., 197, 199
 Elli, R., 1005
 Elliker, P. R., 581
 Ellington, J. S., 378
 Elliot, G. F., 67
 Elliott, E. V., 916
 Elliott, H. W., 828, 829,
 830
 Elliott, K. A. C., 791, 797
 Ellis, D. B., 536, 551
 Ellis, F. W., 822
 Ellis, R. M., 69
 Ellman, G. L., 103
 Ellyard, P. W., 415, 416
 Ellorriaga, C., 760
 Elowson, J., 351
 Elrod, L. H., 718
 Elsbach, P., 368
 El-Sharkawy, M. A., 407,
 416, 417
 El-Sheikh, M., 363
 El Sheraky, A. S., 942
 Elson, D., 209
 Elston, R. C., 166
 Ely, K. R., 892
 Emanoil-Ravivcovich, R.,
 745, 746
 Emery, A. E., 332
 Emmelot, P., 378, 601,
 630
 Emonds, P., 328
 Endecott, B., 601
 Enders, J. F., 717
 Endo, A., 378
 Endroczi, E., 503, 513
 Engel, J., 994, 995, 1016
 Engelhardt, D. L., 532,
 537, 538, 539
 Engelman, D. M., 789,
 797
 Enger, M. C., 529, 530,
 531, 532
 England, P. J., 950
 Englert, M. E., 847
 Englesberg, E., 165, 583,
 588
 Englund, P. T., 107, 313
 Ennis, H. L., 199, 207,
 944
 Enns, K., 869
 Enoki, T., 58
 Enoki, Y., 994, 1003, 1011,
 1015, 1016
 Enser, M., 658
 Enzmann, F., 506, 509,
 510, 511
 Eoyang, L., 544, 545, 546,
 547, 548
 Epand, R. M., 92, 111
 Ephrussi, B., 253, 275,
 720, 964
 Epler, J. L., 185, 258,
 263, 279
 Epp, O., 64, 983
 Eppenberger, H. M., 28
 Epstein, C. J., 69, 166,
 646
 Epstein, H. T., 253, 254
 Epstein, M. A., 736
 Epstein, R. H., 140, 301,
 302, 303, 311
 Epstein, S. E., 807
 Epstein, W., 152, 930, 931,
 964
 Ergle, D. R., 187
 Erickson, R. K., 740
 Erickson, S. K., 677
 Ericsson, L. H., 78
 Erikson, E., 542, 543
 Erikson, R. L., 528, 541,
 542, 543
 Eriksson, L. E. G., 868
 Erlanger, B. F., 117
 Ernback, S., 859
 Ernster, L., 266, 267, 938
 Errera, M., 200
 Ertel, R., 461, 462
 Erwin, J., 374

- Erwin, M. J., 570, 580
 Eschenhof, E., 869
 Escueta, A. V., 810
 Esmann, V., 644, 653
 Essman, W. B., 806
 Estabrook, R. W., 480, 485
 Estrade, S., 721
 Ettinger, M. J., 835
 Evans, C., 170
 Evans, E. A., Jr., 303
 Evans, H. J., 676
 Evans, J., 706
 Evans, J. E., 140, 214
 Evans, M. J., 145
 Evans, S. A., 92
 Evans, T. E., 256, 280
 Evans, W. H., 83, 88, 890
 Evans, W. J., 1004
 Evarts, E. V., 784
 Everett, G. A., 195, 244
 Everett, J. W., 499, 511,
 515, 521, 785
 Everse, J., 662
 Everson, R. G., 403, 404,
 413, 414, 415, 416, 419
 Exton, J. H., 650, 956
 Eyer, J., 264
 Eylar, E. H., 374, 603,
 604, 619, 622, 722, 990
 Eyring, H., 71, 72
- F
- Fahm, S., 591
 Fahraeus, R., 25
 Fain, J. N., 663
 Fainer, D. C., 622
 Falcoz-Kelly, F., 464, 568,
 570
 Fales, H. M., 331, 813
 Falk, J. E., 676
 Falkow, S., 140, 141
 Fallon, H. J., 360, 937
 Fambrough, D. M., 114,
 151, 155, 170, 171, 172,
 173
 Fanestil, D. D., 3, 9
 Fanning, G. R., 140, 141
 Fansler, B. S., 197, 199
 Farber, E., 942
 Fareed, G. C., 311
 Farkas, V., 654
 Farmilo, A. J., 706
 Farquharson, H., 988
 Farquhar, J. W., 481
 Farshchli, D., 329
 Farstad, M., 267, 268
 Fasella, P., 110
 Fasman, G. D., 84
 Fasold, H., 994, 995, 1018
 Fass, E., 759
 Fast, P. G., 338
 Faulhaber, I., 662
 Faulkner, R., 171, 173
 Faulkner, R. D., 244
 Fauman, M., 187, 188,
 258, 265
 Faures, M., 263, 264
 Fauholt, 770
 Fawcett, C. P., 512, 513,
 514, 515, 517
 Fawcett, D., 735
 Fazekas de St. Groth, S.,
 903
 Feary, T. W., 529, 530
 Feder, J., 121
 Feeney, R. E., 104, 109,
 116
 Fefferman, R., 188
 Feigelson, M., 957
 Feigelson, P., 26, 27, 35,
 57, 58, 601, 940, 948, 957
 Feiner, L., 316
 Feinstein, A., 892, 893,
 897, 901
 Feinstein, G., 116, 117
 Feinstein, R. N., 964
 Feix, G., 532, 533, 536,
 540, 541, 544, 546, 547,
 548
 Feldberg, W., 821, 822
 Feldman, L. A., 734
 Feldman, M., 911, 912
 Feldmann, H., 244
 Felix, A. M., 508,
 509
 Felix, J. S., 813
 Fellner, P., 188, 189, 190,
 191, 217, 230, 244
 Fellowes, R. E., Jr., 610,
 628, 893, 896
 Felsenfeld, G., 171
 Fenn, R. H., 69
 Fenson, A. H. H., 350
 Fenwick, M. L., 541, 543
 Ferber, E., 381
 Ferguson, S. M., 430, 868,
 870
 Fernandez, M. J., 661
 Fernandez-Diez, M. J., 104
 Fernandez-Moran, H., 35,
 39, 444
 Ferrell, W. J., 341
 Ferri, G., 659
 Fesler, K. W., 946
 Fessenden, J. M., 282
 Festoff, B. W., 810
 Feuer, G., 512
 Feunteun, J., 211
 Fewson, C. A., 409
 Ficq, A., 215
 Field, J. B., 807
 Fieldhouse, B., 661
 Fields, K. L., 580
 Fiers, W., 233, 235, 238,
 239, 242, 245, 529, 530,
 531, 532, 542, 547
 Figueroa, M. E., 737
 Filikotova, J., 550
 Filippova, L. A., 414,
 417
 Filmer, D., 26, 487,
 1035
 Filmer, D. L., 486
 Filner, P., 931
 Fimognari, G. M., 965
 Finazzi Agro, A., 998
 Finch, J. T., 194
 Findley, D., 93
 Fine, R., 705, 707
 Finean, J. B., 592
 Fineberg, R. A., 945
 Fink, G. R., 165, 166
 Fink, M. A., 736
 Finkelstein, S. M., 478
 Finn, F. M., 856, 859
 Finnerty, W. R., 362
 Finnessey, P., 374,
 375
 Fireman, P., 910
 Firkin, H., 253
 Firkin, F. C., 272, 273,
 274
 Fischbach, F. A., 528
 Fischberg, M., 201, 213,
 214
 Fischer, E., 73
 Fischer, E. H., 447, 448,
 641, 642, 643
 Fischer, H., 381
 Fischinger, P. J., 737,
 741
 Fishchman, D. A., 791
 Fisher, D. B., 367
 Fisher, D. D., 489
 Fisher, E., Jr., 529,
 530
 Fisher, E. A., 661
 Fisher, J. R., 949
 Fisher, S., 187
 Fisher, T. N., 529, 530
 Fishman, M., 913
 Fitch, C. D., 960
 Fitch, F. W., 916
 Fitch, W. M., 693
 Fit, E., 172
 Fitzgerald, A. E., 824,
 826
 Fitzgerald, D. K., 643
 Flaks, J. G., 302, 305
 Flamm, W. G., 177, 178
 Flatmark, T., 673, 674,
 688, 689, 690, 691, 692,
 693, 694
 Flavin, M., 463
 Fleischer, S., 281, 339,
 377
 Fleischli, G., 824
 Fleischman, D. E., 399
 Fleissner, D., 201
 Fleming, W. H., 298, 306,
 309
 Flerkó, B., 782
 Fleisher, J. W., 826
 Fletcher, M. J., 269, 276
 Flickinger, R. A., 145,
 166
 Flora, R. M., 967
 Florez, J., 822
 Florkin, M., 674, 675, 678,
 689

AUTHOR INDEX

- Fluharty, A. L., 813
 Flynn, P. D., 650
 Foerster, J., 910
 Foft, J. W., 138, 145
 Foldes, F. F., 821, 822, 827, 835
 Folk, J. E., 104
 Folkers, K., 327, 506, 509, 510, 511
 Follansbee, C., 813
 Follett, E. A. C., 707
 Fonda, M. L., 878, 879, 880, 881
 Fondy, T. P., 662
 Fong, C. K. Y., 727
 Fong, F. C., 692
 Font, J., 601
 Fontana, A., 105, 121, 844
 Forchhammer, J., 199
 Ford, S., 371
 Ford, W. L., 913
 Ford, W. M., 1023
 Forest, P. B., 104, 657
 Forget, B. G., 195, 209, 210, 211, 217, 230, 236, 239, 244
 Fork, D. C., 398, 399
 Forlani, L., 1004, 1005
 Formanek, H., 64, 983
 Forrester, M. L., 406, 416, 417
 Förster, E., 299
 Foster, D. O., 722, 936, 951
 Foster, D. W., 379
 Foster, J. F., 119
 Fottrell, P. F., 944
 Fouage, J., 529
 Foust, G. P., 870, 871
 Fouts, J. R., 960
 Fowler, S., 381
 Fowlks, E. R., 191, 217
 Fox, C. A., 781, 782, 786
 Fox, C. F., 564, 565, 566, 567, 568, 578, 579, 580, 581, 654
 Fox, R. H., 209
 Fraenkel, D. G., 562, 566, 567, 568, 569, 570, 575, 580, 581
 Fraenkel-Conrat, H., 58, 102, 103, 115, 233, 245, 533
 Franceschini, P., 152
 Francis, G., 744
 Francis, T., Jr., 903
 Francke, B., 541, 543
 Franck, R. I. B., 260
 Franck, H., 533
 Frangione, B., 896, 898
 Frank, H., 705, 706
 Frank, M. M., 915
 Frankel, D. M., 309
 Frankel, F. R., 309
 Franker, C. K., 741
 Franklin, E. C., 897, 898, 910, 914
 Franklin, N. C., 140
 Franklin, R. M., 533, 536, 537, 541, 542, 543, 547, 551
 Franz, J. M., 948, 949
 Franze de Fernandez, M. T., 544, 545, 546, 547, 548
 Franzen, J. S., 104
 Fraschini, F., 515
 Fraser, D., 298, 306, 309
 Fraser, G. M., 951, 952, 962, 963
 Fraser, H. F., 823, 833
 Fratantonio, J. C., 627
 Frater, R., 89
 Frattali, V., 41
 Frazier, W., 788
 Frazier, W. A., III, 458
 Frearson, P. M., 710, 711, 944
 Fredrickson, D. S., 813
 Freedland, R. A., 932, 935, 936, 937, 946, 964
 Freedman, D. X., 833
 Freedman, M. H., 113, 114, 115, 116
 Freedman, R. B., 113
 Freeman, A. E., 703, 723, 730, 737, 746
 Freeman, K. B., 271, 272, 277
 Freeman, M. L., 602
 Freeman, N. K., 332
 Freer, S. T., 69, 84, 87
 Frei, P. C., 912
 French, C. S., 412
 Frenkel, E. P., 296, 312
 Frenkel, R., 476
 Frenster, J. H., 164, 167, 169, 175
 Frereman, F. E., 327, 336
 Fresco, J. R., 131, 192, 193
 Fresheim, J. H., 103, 114
 Freshney, I., 944
 Fresia, P., 822
 Freud, S., 781
 Freundlich, M., 165
 Fric, I., 119
 Frick, P. G., 984
 Fridborg, K., 64
 Fridovich, I., 870
 Fried, M., 482, 712, 718
 Friedberg, E. C., 314
 Friedberg, S. J., 335
 Friedel, R. O., 371
 Frieden, C., 27
 Friederic, D., 625
 Friedkin, M., 297
 Friedman, D. L., 447, 644, 645, 773
 Friedman, H. H., 511
 Friedman, H. P., 912, 914
 Friedman, M., 108
 Friedman, R. M., 382, 942
 Friesen, J. D., 551, 552
 Frilis, P., 327
 Frisell, W. R., 869, 870, 881
 Frist, R. H., 235, 531, 532
 Fritz, P. J., 943, 959
 Froede, H. C., 658
 Froehner, S., 461, 462
 Frohman, L. A., 801
 Fritholm, L. O., 228
 From, D. H., 833
 Fromageot, C., 514
 Fromageot, H. P. M., 533, 536, 550
 Fromm, H. J., 656
 Frontali, C., 136
 Fronticelli, C., 993, 996, 997, 999, 1002, 1003, 1004, 1010, 1013, 1014, 1015, 1022, 1031
 Fruchter, R. G., 111, 123
 Frunder, H., 477, 481
 Fruton, J. S., 117
 Fu, H. C., 332
 Fuchs, E., 198, 207
 Fuchs, S., 118, 119
 Fuchsman, W. H., 992
 Fudenberg, H. H., 912
 Fuhr, J. E., 967
 Fujii, T., 854
 Fujikd, H., 113, 114
 Fujimaki, M., 110
 Fujimoto, A., 570, 654
 Fujimoto, J. M., 822
 Fujimoto, M., 337
 Fujimura, F., 170, 173
 Fujimura, R. K., 532, 551
 Fujinaga, K., 707, 712, 713, 722, 723, 724, 726, 727, 728, 730, 731, 732
 Fujino, Y., 344, 348
 Fujita, H., 267
 Fujita, T., 677, 680
 Fukuda, A., 853
 Fukuda, M., 602, 626
 Fukuda, N., 484, 487
 Fukuhara, H., 253, 263, 264
 Fukui, T., 196, 197, 211
 Fukunaga, K., 643
 Fukushi, S., 601, 603, 604, 606, 608, 609, 612, 617, 618, 629
 Fukuyoshi, Y., 873, 874
 Fuller, R. C., 389
 Fuller, W., 192
 Funatsu, J., 119
 Fung, C. K., 380
 Furano, A. V., 461
 Furror, M. H., 373
 Furukawa, Y., 337
 Furuno, A., 706, 707
 Furuya, E., 801, 830
 Fuxe, K., 833, 834

- Gasic, T., 629
 Gasior, E., 460
 Gaspar, A., 265
 Gassen, H. G., 236, 244
 Gates, M., 822
 Gates, V., 75, 77, 987,
 990
 Gatewood, L. C., 478
 Gatt, S., 343, 381
 Gauhl, E., 416, 420
 Gavitt, J. A., 830
 Gawron, O., 869
 Gay, H., 160
 Gazith, J., 27, 656
 Gazquez-Martinez, I., 640
 Gear, C. W., 475, 489
 Gear, J. R., 332
 Gebhardt, B. M., 906, 907
 Gee, R., 411
 Geering, G., 736
 Geffter, M. L., 316
 Gehring, A. W., 655
 Geiduschek, E. P., 140,
 311, 729
 Geiger, R., 846
 Geis, I., 64
 Gelboin, H. V., 945, 946,
 961, 965
 Gelderman, A. H., 145
 Gelehrter, T., 956, 965
 Gell, P. G. H., 901, 906,
 907
 Gellene, R., 813
 Gellert, M., 482
 Gellhorn, A., 167
 Gelman, N. S., 673, 688
 Gelpi, E., 325, 326, 327
 Gemski, P., Jr., 534
 Genin, C., 263, 264
 Gerakos, J. G., 260, 262
 George, P., 1009
 George, R., 822
 Georges, C., 897
 Georgi, C. E., 336
 Georgiev, G. P., 167, 174, 966, 1005
 Geraci, G., 658, 993, 995,
 1004, 1009, 1031
 Gerald, P. S., 984, 985
 Gerbeck, C. M., 601, 603,
 605, 612
 Gerber, G., 1013
 Gerber, P., 720
 Gerhart, J. C., 26, 27, 57,
 58, 295, 465, 466
 Gerischer, W., 677
 Germershausen, J., 438
 Gero, A., 835
 Gerrais, M., 115
 Gerring, M., 75
 Gerschenfeld, H. M., 788
 Gerschenzon, L. E., 651
 Gershonovich, V. N., 567
 Gershon, D., 709
 Gerwin, B. I., 107, 761
 Gerwin, B. J., 758, 759,
 761
 Gerzon, K., 846
 Gesner, B. M., 630
 Gesteland, R. F., 237,
 529, 530, 532, 534,
 539
 Getz, G. S., 187, 188,
 257, 258, 265, 268, 270,
 276, 372
 Ghelis, C., 84
 Ghiretti, F., 877
 Gholson, R. K., 951
 Ghosh, A., 485, 486
 Ghosh, H. P., 244, 403
 Ghosh, K. B., 336
 Ghosh, S., 562, 563, 564,
 575, 577, 654
 Giacobini, E., 789
 Giacomoni, D., 140, 152,
 218
 Giannelli, F., 906
 Garman, N. J., 833, 835
 Gibbons, I. R., 59
 Gibbs, J. H., 133
 Gibbs, M., 389, 402, 403,
 404, 409, 410, 411, 412,
 413, 414, 415, 416, 417,
 419
 Gibbs, S. P., 265
 Gibson, H., 485
 Gibson, D. M., 937
 Gibson, F., 437, 441
 Gibson, J., 689
 Gibson, J. F., 670
 Gibson, Q. H., 482, 491,
 868, 878, 881, 882, 978,
 986, 990, 997, 998, 999,
 1000, 1001, 1012, 1016,
 1017, 1018, 1019, 1020,
 1021, 1022, 1023, 1025,
 1026, 1027, 1031, 1034
 Gigg, J., 335, 342, 344
 Gigg, R., 335, 342, 344
 Gilbert, G. A., 41, 999,
 1000, 1001, 1002, 1005
 Gilbert, L., 999, 1000,
 1005
 Gilbert, W., 165, 196
 Gilden, R. V., 724, 730
 Glead, Z., 733
 Giles, N. H., 185, 439,
 440, 441, 458
 Gilham, P. T., 227-50;
 133, 134, 231, 233, 234,
 235, 240, 241, 242, 243,
 245, 530, 531
 Giliam, L., 229, 230
 Gillen, D. H., 312
 Gillespie, D., 135, 139,
 146, 148
 Gillespie, R. J., 770
 Gillessen, D., 508, 509,
 513
 Gillette, J. R., 960
 Gilliland, K. M., 343
 Gilman, A. G., 649, 807
 Gilmour, R. S., 174, 175,
 176, 966
 Gingold, E. B., 275, 278

AUTHOR INDEX

- Ginodman, L. M., 513
 Ginos, J. Z., 842
 Ginoza, W., 535
 Ginsberg, A., 58
 Ginsberg, B., 316
 Ginsberg, H. S., 706, 726,
 727, 728, 733
 Ginsberg, T., 244
 Ginsburg, A., 429-72
 Ginsburg, M., 830
 Ginsburg, V., 458, 621,
 624, 630, 640
 Giordano, R., 718
 Giorgio, N. A., Jr., 601
 Giovanni, M., 828
 Girard, M., 197, 207,
 208
 Girardi, A. J., 717, 730
 Giri, S. N., 822
 Gitlin, D., 910
 Giudice, G., 217
 Giuliani, A., 1005
 Givoli, D., 898
 Gladner, J. A., 969
 Glaid, A. J., III, 869
 Glasel, J. A., 770, 771
 Glaser, D. A., 162
 Glaser, L., 27, 574,
 582
 Glass, G. B. J., 601,
 613, 615
 Glassman, E., 166, 799
 Glazer, A. N., 101-30;
 102, 107, 112, 114, 122,
 123
 Glehn, M. V., 868
 Glick, D. M., 110
 Glick, M. C., 338
 Glickson, J. D., 112
 Glimcher, M. J., 18
 Glisin, M. V., 145
 Glisin, V. R., 145
 Glitz, D. G., 233, 245,
 530, 531
 Glynn, I. M., 501
 Gmeiner, J., 350
 Goaman, L. C. G., 52, 53,
 58, 979, 980, 981, 1030,
 1034
 Godin, C., 26
 Godschalk, W., 103
 Godison, G. N., 535, 536
 Goetzl, E. J., 898
 Goggeshall, R., 788
 Gold, L. M., 711
 Gold, M., 316
 Gold, S., 602
 Goldberg, A. M., 793, 794
 Goldberg, E., 661, 662
 Goldberg, I. H., 930
 Goldberg, M. E., 431, 432,
 433, 434, 436
 Goldberg, N. D., 447, 448,
 651, 652, 653
 Goldberger, R. F., 69,
 109
 Goldblatt, P. J., 655
 Golde, A., 740, 741, 743,
 745, 746
 Goldemberg, S. H., 447,
 448
 Goldfine, H., 324, 337
 Goldman, P., 449
 Goldman, S., 478
 Goldstein, A., 821, 824,
 826, 827, 830
 Goldstein, B. N., 487
 Goldstein, D. B., 830, 876
 Goldstein, D. J., 899
 Goldstein, J., 209
 Goldsworthy, A., 407, 416
 Goldthwait, D. A., 314
 Golubeva, E. U., 186
 Gomes, R. A., 199
 Gomez-Dumm, C. L., 257
 Gompertz, S., 621, 624
 Gomyo, T., 110
 Gonzalez-Cadavid, N. F.,
 271
 Good, N. E., 389, 390,
 391, 393, 394, 395, 403
 404, 413
 Good, R. A., 910
 Goodfriend, T. L., 662
 Goodhead, B., 806
 Goodheart, C. R., 737
 Gooding, R. H., 27, 656
 Goodman, H., 238
 Goodman, H. M., 140, 237,
 238, 243, 244, 245, 531,
 532
 Goodman, J. W., 898, 912,
 914
 Goodrich, C. A., 822
 Goodwin, B. C., 177
 Goodwin, F. K., 813
 Goodwin, T. W., 327, 389
 Gorbonoff, M. J., 102,
 124
 Gorchein, A., 337, 350, 373
 Gordon, A. H., 232, 239,
 529
 Gordon, J., 199, 461
 Gordon, J. A., 541, 542
 Gordon, J. E., 326
 Gordon, M., 965
 Gordon, M. W., 810
 Gordon, N. B., 829
 Gordon, R., 794
 Gordon, S., 986
 Goren, H. J., 110
 Goris, J., 643
 Gorodetsky, C. W., 823
 Gorski, J., 965
 Gorski, R. A., 783
 Goto, T., 763
 Gottlieb, A. A., 912, 914
 Gottlieb, A. J., 116
 Gottlieb, P. D., 609, 610,
 628, 893, 894, 896, 898
 Gottschalk, A., 600, 601,
 602, 603, 604, 606, 608,
 614, 615, 620, 628
 Gould, H. J., 192, 194, 217,
 232, 239, 529
 Gould, J. L., 536, 550
 Gould, N. R., 123
 Gould, R. M., 369
 Goulian, M., 309, 315, 871
 Goverde, B. C., 628
 Gowans, J. L., 910, 911
 Grace, D. M., 964
 Grace, J. T., 721, 730
 Graeff, E. G., 832, 834
 Graffi, A., 282
 Graham, A. F., 201
 Graham, D., 417
 Graham, D. G., 408
 Graham, E. R. B., 601,
 602, 603, 604, 606, 614,
 628
 Graham, F., 529, 530
 Grampy, W., 200
 Granata, A. L., 119
 Granboulan, N., 167, 201,
 202, 533, 541, 542, 551
 Granboulan, P., 167, 201,
 202
 Grandchamp, C., 254
 Grande, F., 652
 Granick, S., 941, 961
 Granner, D. K., 943, 945,
 946, 956
 Granoff, A., 736
 Grant, B. R., 416
 Grant, J. A., 892
 Grassetti, D. R., 104
 Gratzer, W. B., 27, 39,
 192, 194, 232, 239
 Graves, D. J., 841, 842,
 643
 Gray, G. M., 349
 Gray, G. W., 350
 Gray, M., 188, 189, 192
 Gray, W., 903
 Grayzel, A. I., 967
 Graziani, M. T., 877
 Greaves, M. F., 910
 Grebner, E. E., 622
 Grechishkin, L. L., 821
 Green, E., 278
 Green, A. A., 447, 1005,
 1024
 Green, D. E., 59, 266, 267,
 268, 277, 282, 876, 877
 Green, D. M., 131
 Green, F. A., 379
 Green, H., 185, 206, 711,
 712, 715, 722, 940, 955
 Green, I., 907, 910, 911,
 913, 920
 Green, J. G., 602
 Green, J. W., 642
 Green, M., 701-56; 705,
 706, 707, 708, 712, 713,
 715, 716, 722, 723, 724,
 725, 726, 727, 728, 729,
 730, 731, 732, 733, 735,
 740, 744, 746, 747
 Green, M. H., 140
 Green, N., 332

- Green, N. M., 601, 771, 772, 773, 897, 902
 Green, S. B., 473-98; 490, 493
 Greenawalt, J. W., 268, 267, 268, 269, 272, 279
 Greenberg, D. M., 297
 Greenberg, G. R., 298, 300, 301, 302, 303, 305, 307, 309
 Greenberg, H., 201, 202, 203, 204, 216
 Greene, R. C., 335
 Greene, R. F., 166
 Greengard, O., 932, 947, 948, 949, 950, 955, 957, 958, 964, 965
 Greengard, P., 642, 648
 Greenman, D. L., 965
 Greenspan, E. M., 963
 Greenspan, M. D., 454
 Greenstein, D. S., 485
 Greenwood, C. C., 640
 Greer, F. A., 389
 Greer, J., 106, 981, 1011, 1012, 1030, 1031
 Gregolin, C., 759, 762, 763, 769, 773
 Gregorlades, A., 741
 Gregory, H., 513, 514
 Gregory, J. J., 118
 Gregson, N. A., 270
 Greiling, H., 613, 616
 Greiner, C. M., 405, 408
 Greschwind, I. I., 522
 Greville, G. D., 389, 390, 397
 Grey, H. M., 891, 895, 898
 Grey, M., 891
 Griesser, R., 771
 Griffin, B. E., 240
 Griffin, M. J., 944
 Griffith, J. S., 1028
 Griffith, O. H., 102
 Griffiths, D. E., 282
 Griffiths, W. T., 327
 Grigorov, L. N., 484
 Grimes, A. J., 985
 Grimmer, G., 332
 Grinnell, A. D., 781, 786
 Grisaro, V., 75, 76
 Grisolia, S., 660, 968
 Grist, K. L., 122
 Grizzard, M. B., 740, 744
 Grob, D., 947
 Groff, T., 77, 111, 117
 Grogan, D., 207
 Grollman, A. P., 621, 624
 Grollman, E. F., 621, 624
 Gröndahl, N. J., 610
 Groot, G. S. P., 390, 391, 393, 399
 Gropper, L., 40
 Gros, C., 463, 464, 518
 Gros, F., 140, 196, 200, 931, 966
 Gross, E., 117
 Gross, E. G., 835
 Gross, H. J., 244
 Gross, J., 631, 969
 Gross, J. D., 584
 Gross, N. J., 255, 256, 270, 372
 Gross, P. K., 202
 Gross, R. R., 143, 145, 931, 965
 Gross, S. K., 376
 Grossbard, L., 655, 950
 Grossberg, A. L., 113, 114, 115, 116, 900
 Grossman, A., 946, 947
 Grossman, L. I., 254, 255
 Grossman, S. P., 778
 Grotic, M. F., 324
 Grosvenor, C. E., 521
 Grote, I. W., 505, 506, 517
 Gruber, M., 114
 Grucha, M., 741
 Grummt, F., 184, 188, 217
 Grunstein, M., 216
 Guarino, D. U., 306
 Guerineau, M., 254
 Guerrero, S., 835
 Guerritore, D., 37
 Guest, J. R., 431, 432, 436
 Guiditta, A., 877
 Guidotti, G., 106, 801, 829, 996, 999, 1000, 1001, 1006, 1034
 Guillemin, R., 499-526; 499, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 517, 518, 519, 522
 Guilloton, M., 657
 Guinand, S., 897
 Gulbinsky, J. S., 476
 Gumaa, K. A., 656
 Gumand, S., 897
 Gumucio, J. J., 477
 Gunalp, A., 188, 199
 Gunne, L. M., 832, 833, 834
 Gunsalus, I. C., 886, 887
 Gunstone, F. D., 363
 Gunther, J., 477, 481
 Gupta, N. K., 869
 Gurd, F. R. N., 110, 121, 880, 990, 998
 Gurdon, J. B., 201, 202, 214, 215, 217
 Gurley, L. R., 169, 173
 Gurney, E. G., 256
 Guroff, G., 642
 Gurr, M. I., 336, 346, 370, 374
 Gussin, G. N., 532, 533, 537, 538, 539, 540, 549
 Gut, V., 861
 Gutfreund, H., 70, 74, 662
 Guthöhrlein, G., 768
 Gutnick, D. L., 327
 Gutte, B., 69, 853, 854
 Gutes, E., 253, 256
 Gutes, S., 253, 256
 Guttmann, St., 843, 847, 849, 850, 858, 859
 Gwinup, G., 822
 Gyang, E. A., 828, 835
 Gysbers, K. J., 805

H

- Hahti, E., 333
 Haard, N. H., 277
 Haas, D. J., 64, 67, 68
 Haas, H., 709, 712
 Haas, W. L., 846
 Haavik, A. G., 282, 455
 Habeeb, A. F. S. A., 113, 115, 119
 Habel, K., 714, 717
 Haber, E., 890, 895, 898, 899, 901
 Haberer-Liesenkötter, I., 412
 Habicht, G. S., 917, 920
 Hack, M. H., 334
 Hackenbrock, C. R., 265
 Hacker, D., 272, 279
 Hackett, D. P., 188
 Hackney, E. J., 937
 Haddad, Z. H., 910
 Haddy, F. J., 805
 Hadziyev, D., 188
 Haekel, R., 660
 Haertzen, C. A., 823
 Hageman, R. H., 419
 Hagen, A., 449, 455
 Hagen, P.-O., 337
 Hager, C. B., 934, 955, 964, 967
 Hager, L. P., 801, 880, 882, 663
 Hägglmark, A., 296, 297, 298
 Haghiri, H., 565, 568, 570
 Hagopian, A., 722
 Haigh, W. G., 330
 Haines, J. A., 240
 Haines, T. H., 351
 Hajdu, J., 341
 Hajra, A. K., 335, 361
 Hakala, M. T., 944
 Hakomori, S., 630, 722
 Halász, B., 782, 783
 Haldane, J. B. S., 489
 Haldar, D., 257, 271, 272, 277
 Hale, J. H., 675, 679
 Halenz, D. R., 758, 759, 773
 Hall, B. D., 131, 139, 140, 193
 Hall, C. W., 622, 625, 627
 Hall, D. H., 308, 309
 Hall, D. O., 391
 Hall, R. H., 721, 730
 Hall, Z. W., 790

AUTHOR INDEX

- Hallenbeck, J. M., 372
 Haller, E. W., 499, 501
 Hallinan, T., 367
 Halloin, J. M., 191, 217
 Halperen, S., 735
 Halpin, R. A., 378, 592
 Halvorson, H. O., 213, 256
 Hamada, T., 117
 Hamaguchi, K., 692, 693
 Hamerman, D., 722
 Hamilton, C. L., 102
 Hamilton, G. A., 868, 883
 Hamilton, H. B., 953
 Hamilton, J. A., 760, 770
 Hamilton, J. G., 334
 Hamilton, M. G., 184, 185
 Hamilton, R. J., 324, 325
 Hammerschlag, R., 802
 Hammond, B. J., 481
 Hampe, A., 744
 Hampshire, R., 986
 Hanabusa, K., 640
 Hanafusa, H., 738, 741
 Hanahan, D. J., 334, 342,
 345, 380
 Hanawalt, P., 311
 Hanawalt, P. C., 254, 256
 Hancock, R. L., 965
 Handa, D. T., 961
 Handa, S., 349
 Handelman, E. J., 789
 Handler, P., 646, 883
 Hanisch, G., 994, 995, 1016
 Hanlon, S., 40
 Hannah, A., 168
 Hano, K., 828, 835
 Hansen, I. A., 333
 Hansen, R., 954
 Hansen, R. G., 445, 643
 Hansen, R. P., 331, 332
 Hanson, A. W., 64, 68, 92
 Hanson, R. E., 686, 687
 Hanson, T. E., 562, 563,
 654
 Harada, F., 237, 239, 244
 Harada, M., 116, 878, 879,
 880, 881
 Harano, Y., 660, 661, 936,
 950
 Harbon, S., 608, 615
 Hardin, J. M., 169, 173
 Hardman, J. G., 649
 Hardman, J. K., 431, 432,
 433
 Hardman, K. D., 65, 67, 68,
 69, 70, 92, 111, 853, 855,
 998
 Hardy, D. G., 824
 Hardy, J., 297, 309
 Hardy, R. W. F., 870, 871
 Hare, J. D., 717, 722
 Harel, J., 740, 745, 746
 Harel, L., 740, 745, 746
 Harell, D., 119
 Hargie, M. P., 630
 Harrington, C. R., 5
 Harker, D., 64, 65, 69, 70,
 92, 111, 853
 Harlow, R. D., 341, 342,
 343
 Harmsen, B. J. M., 659
 Harned, H. S., 51
 Harold, F. M., 579, 580
 Harper, A. E., 935, 936
 Harper, N. J., 824, 830
 Harrington, G. W., 330
 Harrington, J. A., 725
 Harrington, M. R., 705,
 707
 Harrington, W. F., 601,
 616, 659
 Harris, A., 939, 940, 942
 Harris, C. M., 110, 121
 Harris, E. D., 614, 629
 Harris, E. J., 391, 394,
 395
 Harris, G., 913
 Harris, G. W., 511, 512,
 513, 514
 Harris, H., 931, 964, 986
 Harris, J., 330
 Harris, J. L., 27, 101, 102,
 113, 114, 559
 Harris, J. M., 536, 550
 Harris, L. S., 835
 Harris, R. A., 59, 266, 267,
 268
 Harris, R. V., 330, 337
 Harris, S. R., 876, 881
 Harrison, E. S., 10
 Harrison, P. M., 528
 Harrison, S. C., 998
 Harrison, T. S., 13
 Harshman, S., 646
 Hart, P., 361
 Hartdegen, F. J., 75
 Harte, R. A., 74
 Hartley, B. S., 27, 72, 83,
 85, 88, 101, 102, 113, 114,
 117, 123
 Hartley, J. W., 703, 710,
 737, 738, 740, 746, 747
 Hartley, R. W., Jr., 932, 947
 Hartman, K. A., 540, 549
 Hartman, P. E., 566, 567,
 568, 569, 581, 654
 Hartman, S. C., 292, 295
 Hartree, E. F., 683
 Hartridge, H., 1019
 Hartsock, J. A., 64, 65, 69,
 70, 72, 77, 78, 79, 80, 81,
 82, 83, 117
 Hartt, C. E., 404, 405
 Hartwell, L. H., 709, 710, 712
 Haruna, I., 526, 536, 543,
 544, 545, 547
 Harvey, A. M., 947
 Harvey, J. A., 832
 Harwood, J. L., 370
 Harwood, J. P., 653
 Haschemeyer, R. H., 114
 Hase, J., 108
 Haselkorn, R., 192, 193,
 200, 233, 245, 254
 Hashimoto, S., 237, 244,
 880
 Hashimoto, Y., 615, 682,
 683, 686, 688
 Haslam, W. J., 240
 Hass, G. M., 111, 122
 Hass, L. F., 114, 655,
 658, 758
 Hasselback, W., 592
 Hassid, W. Z., 640
 Hastings, A. B., 1-24; 3,
 4, 5, 6, 7, 8, 9, 10, 11,
 12, 13, 14, 15, 16, 17,
 21
 Hastings, J. R. B., 184,
 188
 Hatanaka, M., 431, 432,
 709, 711
 Hataway, G., 662
 Hatch, M. D., 404, 405,
 406, 408, 409, 416
 Hatchikian, E. C., 870
 Hatifi, Y., 282
 Hathaway, G. M., 431,
 433, 434
 Hathaway, P., 992, 1028
 Hatlen, L. E., 209, 210,
 212, 213, 214, 218
 Hattman, S., 551
 Hauber, J., 380
 Haubrich, D. R., 832
 Hauge, J. G., 682
 Haurowitz, F., 57
 Hausen, F., 528, 709
 Hauser, H., 827, 828
 Haussler, M. R., 965
 Haut, M., 488
 Havir, E. A., 410, 411,
 414, 415
 Hawley, E. S., 272, 279
 Hawthorne, J. N., 349,
 370, 371
 Hawtrey, C., 661
 Hay, A. J., 625
 Hay, D., 737
 Hay, J., 264, 707
 Hay, J. B., 349
 Hayashi, O., 268, 868
 Hayakawa, T., 873, 874
 Hayashi, A., 344, 348,
 992, 1016
 Hayashi, K., 119
 Hayashi, M., 140
 Hayashi, N., 1016
 Hayashi, S., 581, 943,
 945, 946, 956
 Hayashi, Y., 199
 Hayes, M. B., 877, 878
 Hayes, P., 408
 Haynes, R., 116
 Haynes, R. C., Jr., 651
 Haywood, A. M., 536, 538,
 550
 Hazen, E. E., Jr., 65
 Hazen, S. R., 891
 Heagy, F. C., 312
 Hearn, V. M., 621, 624

- Hearn, W. R., 504, 517,
518
- Hearst, J. E., 151-82; 152,
153, 155, 157, 158, 160,
171
- Heath, E. C., 374
- Heath, O. V. S., 416
- Heber, U., 412, 414, 415,
417
- Hebert, R. R., 540, 549
- Hecht, N. E., 197, 211
- Heckmann, K., 490
- Hedenius, A., 25
- Hedeskov, C. J., 644,
653
- Hedge, G. A., 822
- Hedrick, J. L., 641
- Hegyi, G., 112
- Heidelberger, M., 4, 5
- Heilbronn, E., 601
- Heilman, D. H., 915
- Heimer, R., 888
- Heineken, R. G., 486,
490
- Heinenberg, S., 989
- Heiner, D. C., 906
- Heinmets, F., 474, 480,
483, 484
- Heinrikson, R. L., 107,
111
- Heinstein, P. F., 762
- Heinz, E., 347, 591
- Heirscheidt, R., 483
- Heisenberg, M., 533
- Heitz, J. R., 108
- Helge, H., 264
- Helinski, D. R., 431, 432
- Hell, A., 200
- Helleman, P. W., 875
- Heller, A., 832
- Heller, J., 601
- Heller, M., 382,
659
- Heller, P., 985, 1016,
1023
- Hellerman, L., 867-88; 869,
876, 878, 879, 880, 881,
882, 883
- Hellstrom, L., 714, 717
- Hellung-Larsen, P., 662
- Helmi, S. A., 942
- Helmkamp, G., 138
- Helmreich, E., 27
- Helmy, F. M., 334
- Helting, T., 622
- Hemmerich, P., 869
- Hemming, F. W., 327,
328
- Hemping, H. G., 477
- Hendelman, L. U., 477
- Henderson, A., 829
- Henderson, L. J., 5
- Henderson, P. J., 395
- Henderson, R., 68, 69, 70,
83, 84, 85, 86, 87, 88,
115, 117, 119
- Henderson, W. R., 717
- Hendley, D. D., 987
- Henes, C., 230
- Hengstenberg, W., 562, 563,
564, 565, 567, 580, 654
- Henle, G., 736
- Henle, W., 736
- Henley, K. S., 477
- Henn, F. A., 59
- Henn, S. W., 878
- Henney, C. S., 901
- Henney, H. R., 217, 443,
444
- Hennig, W., 178, 216
- Henning, R., 372
- Henning, U., 374, 430, 431,
432, 442, 443, 444, 445
- Henri, V., 489
- Henrikson, C. V., 328
- Henry, C., 915
- Henry, J. E., 331
- Henry, P. H., 708, 717,
723, 730
- Henson, C. P., 271
- Heppel, L. A., 133, 566,
570, 582, 969
- Herbert, E., 244
- Herman, G., 608, 615
- Herman, T. S., 965
- Hermann, E., 58
- Hermans, J. Jr., 119
- Hernandez, W., 622
- Herndon, J. H. Jr., 813
- Herries, D. G., 93
- Herring, G. M., 601, 612
- Herriott, J. R., 64
- Herriott, S. T., 293
- Herrlich, P., 280
- Herrmann, H., 955
- Herrmann, R., 549
- Hers, H. G., 626, 627,
644, 645, 646, 650, 651,
652
- Hershey, A. D., 303
- Hertel, R., 442, 443, 445
- Hertoche-Lefevre, E., 267,
268
- Hertzman, E., 648
- Herz, C., 442, 444
- Herzenberg, L. A., 917,
918
- Herzfeld, A., 949, 950
- Hezeth, J. D., 406, 407,
416
- Hess, B., 474, 475, 476,
490, 491, 660
- Hess, G. R., 75, 84
- Hess, J. L., 419, 420
- Hessel, B., 610
- Heston, W. E., 952, 962,
963
- Heydanek, M. G., Jr., 375
- Heyder, E., 847
- Heyroth, F. F., 25
- Heywood, J. D., 953
- Heywood, S. M., 965
- Hiatt, H., 196
- Hiatt, H. H., 931, 939,
942, 967
- Hibbard, E., 806
- Hicks, S. E., 937
- Hidaka, H., 878, 879
- Hiesey, W. M., 416, 420
- Higashi, K., 207
- Higashi, S., 343,
- 344
- Higashi, T., 678
- Higashi, Y., 328, 375, 375,
376, 378
- Higgins, J. J., 474, 475,
485, 486, 488, 491
- High, D. F., 84
- Higinbotham, W. A., 487
- Higman, H. B., 788
- Hignite, C. E., 244, 246
- Higuchi, T., 770
- Hildreth, W. W., 398
- Hill, A., 347
- Hill, E. E., 360, 362, 363,
364
- Hill, K. L., 563, 564, 565,
567
- Hill, R., 389, 403, 404,
410, 411, 412, 413,
415, 417
- Hill, R. D., 371
- Hill, R. J., 122
- Hill, R. L., 94, 103, 110,
111, 121, 122, 458, 459,
610, 625, 628, 693, 896,
941, 989
- Hillcoat, B. L., 944
- Hille, B., 789
- Hilleman, M. R., 730
- Hiller, R. G., 405
- Hilliard, J., 503, 513
- Hills, D. C., 199
- Hilschmann, N., 890
- Himes, R. H., 759
- Himmelsbach, C. K., 822,
830
- Himms, J. M., 877
- Himoe, A., 84
- Hind, G., 389, 390, 391,
393, 394, 395, 399, 400,
401, 403, 404, 414
- Hindley, J., 230, 237, 238,
239, 243, 245, 529, 530,
531, 532
- Hinkle, P. C., 282
- Hinrichsen, D. F., 602,
608, 625, 626
- Hiraga, S., 293
- Hirai, K., 679
- Hiromi, K., 881
- Hirotta, S., 675
- Hirs, C. H. W., 92, 101,
110, 112, 118, 119, 122,
601, 602, 603, 605, 606,
609, 611, 612, 618, 628
- Hirsch, C. A., 188, 217
- Hirsch, G. P., 967
- Hirsch, P. F., 847
- Hirschman, S. Z., 741
- Hirschmann, R., 69, 855,

AUTHOR INDEX

- Hirt, B., 706, 712
 Hiskey, R. G., 844, 848, 849
 Hitzig, W. H., 984
 Hu, I. J., 743
 Hiyama, T., 398
 Hizukuri, S., 643
 Hulica, L. S., 151, 152, 155, 169, 173, 176, 201
 Ho, C., 990, 1009
 Ho, M. W., 627
 Ho, N. W. Y., 240, 241
 Hoagland, V. D., Jr., 28, 39
 Hoard, J. L., 1028, 1029
 Hoare, D. G., 117
 Hobbs, M. D., 296, 304, 305, 307, 312
 Hoch, G., 392, 416, 417, 418, 419
 Hochstein, P., 942
 Hodas, S., 296
 Hodge, A. J., 406
 Hodgkin, A. L., 789
 Hodnett, J., 201, 202, 203
 Hoeldtke, R., 823
 Hoeprich, P. D., 875
 Hoerr, C. W., 332
 Hofer, H. W., 658
 Hoffee, P., 110, 583
 Hoffman, H. A., 952, 962
 Hoffman, J. F., 590, 591
 Hoffman, M., 650
 Hoffmann, H. P., 254
 Hoffmann, K., 327, 337
 Hoffmann, P., 608, 845, 846, 849
 Hoffmann-Berling, H., 529, 530, 543, 552
 Hofmann, K., 771, 856, 857, 859
 Hofmann, T., 119, 874
 Hofsneider, P. H., 198, 207, 449, 528, 529, 541, 543, 544, 551
 Hofstotter, T., 272, 279
 Hogg, N. M., 893, 894, 896
 Hogg, R., 588
 Hoggan, M. D., 717
 Hoglund, S., 725
 Hohman, P., 170, 173
 Hohn, T., 549
 Hökfelt, T., 833, 834
 Hokin, L. E., 562, 591
 Hokin, M. R., 562
 Hol, W. G. J., 89
 Holbrook, J. J., 104, 108
 Holburn, R. R., 345
 Holden, J. T., 587, 589
 Holevšovský, V., 119, 121
 Holland, I. B., 543, 547
 Holland, J., 200
 Hollander, J., 372
 Holloway, M. R., 107
 Hollendorf, A. W., 299
 Hollenberg, C. P., 254
 Hollenberg, P. F., 26, 661
 Holler, B. W., 189, 190, 202, 204, 208
 Holley, R. W., 195, 228, 229, 238, 241, 244
 Hollingsworth, B. R., 154, 184
 Hollinshead, A., 733
 Hollis, D. G., 329
 Hollis, V. W., Jr., 461
 Holloszy, J. O., 663
 Holloway, P. W., 327, 332, 377
 Holly, F. W., 69, 855, 856
 Holman, H. R., 897
 Holman, R. T., 332
 Holmes, L. A., 199
 Holmes, K. C., 194, 474
 Holmes, W., 485
 Holmgren, A., 296, 871, 873
 Holm-Hansen, O., 411
 Holowezek, M. A., 191, 196, 217
 Holt, C. E., 254, 256
 Holt, L. E., Jr., 15
 Holt, P. G., 956
 Holtom, R. W., 689
 Holtzman, E., 201, 202
 Holz, G. G., Jr., 330
 Holzer, H., 969
 Holzer, M. E., 654
 Homan, J. D. H., 628
 Hommes, F. A., 486, 681
 Honig, G. R., 942
 Honzl, J., 856
 Hoobler, J. K., 184, 185
 Hood, L., 890, 891, 892, 893, 894
 Hooper, J., 646
 Hooper, S. N., 331
 Hope, D. B., 849
 Hopfer, V., 395
 Hopkins, C. Y., 330, 331, 332
 Hopkins, J. W., 185, 201, 204, 213, 214, 216
 Hopkins, S. M., 366
 Hoppel, C., 267
 Hopper, S., 940, 943, 947, 957
 Hopper-Kessel, L., 449
 Horanyi, M., 112
 Hore, P., 664
 Horecker, B. L., 26, 27, 110, 114, 403, 407, 568, 570, 582, 658
 Hori, K., 544, 545, 546, 547, 548, 689
 Hori, T., 344
 Horibata, K., 431
 Horinishi, H., 116, 117
 Horio, T., 673-700; 674, 678, 680, 682, 685, 686, 689, 690, 691, 692, 693, 695
 Horiuchi, K., 532, 533, 535, 537
 Horuti, Y., 680, 685
 Horney, D. L., 442, 445
 Hornichter, R. D., 656
 Horning, E. C., 324
 Horning, M. G., 449
 Hornykiewicz, O., 813
 Horowitz, J., 199
 Horowitz, M. I., 601, 613, 615
 Horridge, G. A., 778, 781, 782, 786, 792
 Horrocks, L. A., 341, 342, 364, 368
 Horton, A. A., 391
 Horton, H. R., 119
 Horwitz, A., 55, 992, 1036
 Horwitz, A. L., 623
 Hoshiba, T., 324
 Hoskinson, R. M., 233, 242, 244
 Hosoda, J., 300, 311
 Hosoi, K., 642
 Hosokawa, K., 199
 Hotham-Iglewski, B., 536, 551
 Hotta, Y., 168
 Houck, J. C., 969
 Hough, B. R., 145
 Hough, L., 602
 Houlihan, B. M., 876
 Hounsell, J., 194, 232, 239
 Housholder, D. E., 504, 517, 518
 Houston, L. L., 88
 Howard, J. B., 107, 964
 Howard-Flanders, P., 314
 Howe, J., 184
 Howell, R. R., 813, 965
 Howes, J. F., 835
 Howland, J., 14
 Hoyer, B. H., 132, 138, 141, 145, 717
 Hoyle, R. J., 333
 Hu, A. S. L., 602
 Hu, C. C., 627
 Huang, C., 27
 Huang, K. C., 644
 Huang, M., 278
 Huang, P. C., 146, 147, 148, 165, 167, 173, 174, 175, 198, 213, 215, 966
 Huang, R. C. C., 165, 167, 170, 173, 174, 175, 966
 Huang, W., 69

- Hubby, B. G., 271
 Hubel, D. H., 800
 Huber, H., 912
 Huber, R., 64, 983
 Huberman, J. A., 152, 153,
 154, 155, 157, 159, 162,
 214
 Hubscher, G., 382,
 655
 Hucho, F., 445, 446
 Hudson, B., 253, 255
 Hudson, J. B., 551, 552
 Hudson, L., 188, 189,
 192
 Hudson, M. A., 412
 Huebner, R. J., 703, 714,
 717, 722, 723, 724, 730,
 737, 738, 739, 740, 741,
 746
 Huehns, E. R., 39, 986,
 1002, 1003
 Huennekens, F. M., 103,
 297, 873
 Huet, C., 270
 Huet, J., 261
 Hug, C. C., Jr., 826
 Huggins, C. G., 370
 Hughes, C. R., 602,
 603
 Hughes, R. G., 713
 Hughes, R. R., 344
 Hughes, S. D., 958, 967
 Hughes, W. J., Jr., 102
 Huguenin, R. L., 847
 Huidobro, F., 831
 Huijting, F., 447, 448, 643,
 645, 646, 652
 Huisman, T. H. J., 984,
 988
 Hull, R. N., 722
 Human, M. L., 312
 Humm, D. G., 259, 263,
 264
 Hummel, J. B., 587
 Hunniski, P. M., 641
 Humphrey, J. H., 905,
 915, 916, 918
 Humphrey, R. L., 899
 Humphreys, G. K., 297
 Hung, P. P., 231, 449,
 550, 551
 Hunkeler, F. L., 643
 Hunsley, J. R., 660
 Hunt, D. F., 244, 246
 Hunt, J. A., 191, 217, 245,
 965, 986
 Hunt, S., 593
 Hunter, E., 985
 Hunter, G., Jr., 813,
 961
 Hunter, J. A., 941
 Hunter, R. L., 919
 Huppert, J., 192, 194,
 529, 551, 740, 745, 746
 Hurd, S. S., 641
 Hurlbert, R. B., 201
 294
 Hurst, M. W., 370
 Hurst, R. O., 489
 Hurwitz, J., 170, 293, 316,
 403, 407
 Husain, S. S., 89, 90,
 106
 Husbands, D. R., 360
 Hussain, Q., 893, 896
 Husson, F., 573
 Huston, C. K., 325
 Huston, R. B., 642, 643,
 768
 Hustrulid, R., 663
 Hutchins, R. F. N., 327,
 333
 Hutchinson, F., 192
 Hutchinson, D. J., 152,
 155
 Hutchinson, H. T., 338, 362
 Hutchinson, W. D., 985
 Hutson, J. C., 302
 Hutson, N. K., 892
 Huttunen, J. K., 349
 Hutzler, J., 813
 Huxley, H. E., 59, 430
 Hsie, A., 958,
 967
 Hsiung, P. L., 738
 Hsu, C., 960
 Hsu, R. Y., 449, 455
 Hsu, T. C., 164, 169
 Hsu, W. T., 138, 145
 Hwang, K. J., 992
 Hwang, M., 174
 Hwang, M.-I. H., 188, 931
 966
 Hwang, P. C., 333
 Hyde, B. B., 201, 202
 Hyde, J. S., 868
 Hyne, S., 649
 I
 Iaccarino, M., 108
 Ibaen, K. H., 661
 Icén, A., 875
 Ichikawa, Y., 686
 Igarashi, M., 515
 Igarashi, R. T., 188, 217
 Iglewski, W. J., 537, 547,
 551
 Ikeda, K., 692, 693
 Ikeda, Y., 315, 529, 530,
 541, 550, 552
 Ikenada, T., 601, 802,
 603, 605, 612
 Ilgenfritz, G., 1007, 1021,
 1022
 Illis, L. S., 800
 Imai, Y., 686, 687, 688,
 692, 693
 Imamoto, F., 140, 431,
 436
 Imoto, T., 119
 Imura, N., 230, 244
 Inada, Y., 113
 Inagami, T., 85, 67, 68,
 69, 70, 84, 85, 92, 111,
 123, 853, 855
 Ingles, D. W., 71
 Ingoglia, N., 826
 Ingraham, J., 299
 Ingraham, L. L., 770
 Ingram, D. J. E., 992,
 1028
 Ingram, P., 570
 Ingram, V. M., 192, 202,
 204, 205, 986
 Iman, F. P., 891
 Iman, R. B., 707
 Inoki, R., 830
 Inoue, S., 601, 613,
 615
 Inoue, Y., 243
 Inturrisi, D. G., 822
 Inward, P. W., 85
 Ioppolo, C., 27, 998,
 1003, 1004, 1014
 Ippen, K. A., 531, 534,
 535
 Irias, J. J., 35, 762
 Irie, M., 110
 Irimajiri, S., 898
 Irwin, I. S., 717
 Irvine, D., 986, 1009,
 1010
 Irvine, D. M., 339
 Irving, D., 491
 Isaacs, J. J., 735
 Isaacs, W. A., 986
 Isaksson, L. A., 189
 Isbell, A. F., 344
 Iselin, B., 848, 855
 Isemura, H., 879
 Isensee, H., 662
 Ishida, M. R., 253
 Ishida, Y., 521
 Ishihama, A., 196
 Ishihara, K., 601, 603,
 612
 Ishikawa, E., 446
 Ishimoto, M., 874
 Ishizaka, K., 899, 901
 Ishizuka, I., 346
 Izmaili, I. A., 363
 Itoe, S., 119
 Isomoto, A., 881
 Issekutz, B., 778
 Isselbacher, K. J., 577
 Itabashi, H. H., 784
 Itagaki, E., 457, 680,
 682, 683
 Itahashi, M., 679
 Itano, H. A., 116
 Itasaki, O., 344
 Ito, J., 431, 432, 436
 Ito, M., 781, 782, 786,
 792
 Ito, S., 334, 348
 Itoh, T., 196, 197, 211
 Iuchi, I., 984, 988
 Ivanov, V. T., 395
 Ivanyi, J., 906
 Iversen, L. L., 790

AUTHOR INDEX

- Iwabuchi, M., 199
 Iwanaga, S., 610
 Iwanami, Y., 188, 189, 190
 Iwasaki, H., 681, 682, 684
 Iwashima, A., 257
 Iwata, H., 834
 Iwatsubo, K., 830
 Iwatsuki, N., 311
 Iyengar, B. T. R., 332
 Iyer, R. V., 403
 Izawa, M., 168, 215
 Izawa, S., 389, 390, 391,
 393, 394, 400, 401, 403,
 413
 Izumi, K., 601, 630
 Izumiya, N., 857, 860
- J
- Jack, R. C., 338
 Jackiw, A. B., 341
 Jackson, L. M., 437
 Jackson, D. A., 431, 432,
 434, 435
 Jackson, J. B., 395, 396,
 397, 398, 399, 401, 402
 Jackson, J. J., 374
 Jackson, L. L., 331
 Jackson, R. L., 603, 605,
 609, 611, 612, 618
 Jackson, S., 27
 Jackson, W. A., 418, 419
 Jacob, F., 162, 163, 825,
 930, 931, 964
 Jacob, H. S., 984
 Jacob, J., 201, 202, 332
 Jacob, M., 143, 528, 529,
 530, 533
 Jacob, S. T., 207
 Jacob, T. A., 69, 856,
 860
 Jacobs, A. S., 986
 Jacobs, M. H., 395
 Jacobson, B., 758, 759
 Jacobson, B. E., 761
 Jacobson, G., 77
 Jacom, M., 1001
 Jacquemelin-Sablon, A., 311
 Jacquenoud, P.-A., 843,
 847, 848, 850
 Jacques, P., 625
 Jacquot-Armard, Y., 897
 Jaeger, E., 842, 846
 Jaenicke, R., 27
 Jaffé, H. H., 34
 Jaffe, J. H., 831
 Jagendorf, A. T., 389, 392,
 393, 399, 400, 403, 404,
 414
 Jäger, G., 846
 Jagger, W. S., 394, 395
 Jain, M. K., 591
 Jakob, H., 275, 278
 James, A. T., 330, 337, 374
 James, K., 916
 James, V. S., 916
 Jamieson, D., 649
- Jamieson, G. A., 601, 603,
 612, 630
 Jamieson, J. C., 618
 Jandi, J. H., 912
 Jang, C. S., 822
 Jangas, R. L., 650, 651
 Janin, J., 463, 464
 Jann, K., 350
 Jansen, V., 813
 Janssonius, J. N., 64, 65,
 69, 70, 89, 90, 91, 107
 Januska, M. M., 806
 Jao, L., 77, 111, 117
 Jarretzky, O., 92, 93, 94,
 111, 112
 Jarett, L., 650
 Jarrett, O., 737
 Jasaitis, A. A., 395
 Jasinski, D. R., 823
 Jasper, D. K., 265
 Jasper, H. H., 791
 Jauregul-Adell, J., 121
 Javaherian, K., 998
 Jaworska, H., 215
 Jeacock, M. K., 793, 794
 Jeanes, A., 602
 Jeanloz, R. W., 601, 602,
 603, 604, 605, 607, 617
 Jeantet, Cl., 199
 Jeanteur, Ph., 192, 203,
 204, 205, 213, 216
 Jeckel, D., 106, 107
 Jeckel, R., 104, 108
 Jeffay, H., 943
 Jeffers, J. S., 240, 241
 Jefferson, L. S., 956
 Jeffrey, B. A., 37, 64
 Jeffrey, P. D., 40
 Jehle, H., 810
 Jencks, W. P., 70, 71, 72,
 73, 74, 77, 85
 Jenkins, H. M., 330
 Jenkins, S. R., 856
 Jenner, F. A., 628
 Jensen, E. V., 965
 Jensen, F., 707, 709
 Jensen, F. C., 715, 720
 Jensen, L. H., 64
 Jensen, R. G., 333, 403,
 405, 412, 413, 414, 415,
 416, 417
 Jensen, R. H., 162, 167
 Jentsch, J., 844, 846
 Jeppesen, P. G. N., 232,
 237, 238, 240, 245, 531
 Jerfy, A., 119
 Jerne, N. K., 890, 915,
 918, 920
 Jevans, A. W., 330, 331
 Jezyk, P., 363
 Jiang, R., 69
 Jick, H., 277, 960
 Jimenez de Asua, L., 660,
 661
 Jirgensons, B., 895
 Jochum, K., 828
 Johannes, K.-J., 491
- Johannesson, T., 835
 Johansen, G., 491
 Johansen, P. G., 601, 602,
 603, 605, 610, 612
 John, E. R., 786
 John, H. A., 148
 Johns, E. W., 170, 175
 Johnson, B. C., 937
 Johnson, C. A., 601, 614,
 629
 Johnson, E. S., 828
 Johnson, G. S., 661
 Johnson, H. S., 404, 405,
 406, 408
 Johnson, I. S., 722
 Johnson, J. H., 394, 395
 Johnson, J. L., 140, 141
 Johnson, K. D., 654
 Johnson, K. E., 140, 141
 Johnson, L. M., 431, 434,
 436
 Johnson, L. N., 65, 67, 68,
 69, 70, 74, 75, 76, 92,
 111, 853, 855
 Johnson, N., 580
 Johnson, N. C., 331
 Johnson, R. C., 330
 Johnson, S. M., 483, 492
 Johnston, G. A. R., 876
 Johnston, I. R., 621
 Jolchine, G., 418
 Joliffe, P. A., 416, 420
 Jolles, P., 121, 608, 615
 Jolley, R. L., 602
 Jollow, D., 265
 Jolly, W. W., 59
 Jondorf, W. R., 944
 Jones, B. F., 947
 Jones, C. W., 676
 Jones, D. P., 377
 Jones, E. T., 873
 Jones, K., 148, 174, 188,
 205, 215, 216
 Jones, M. E., 58, 768
 Jones, M. S., 266, 268
 Jones, O. T. G., 266, 268
 Jones, R. T., 660, 966, 988
 Jones, T. D. H., 579
 Jones, V. E., 908
 Jones, W. A., 768
 Jones, W. M., 120, 121
 Jonsson, J., 833, 834
 Joo, C. N., 334, 342, 343
 Jordan, B., 211
 Jordan, P. M., 876
 Jorgensen, S. E., 313
 Jori, G., 121
 Jorpes, J. E., 850, 851
 Josephson, K., 71
 Josey, W. E., 737
 Joshi, G., 411
 Joshi, J. G., 646
 Joshua, H., 856, 857, 860
 Josse, J., 294, 301, 302,
 303, 309, 601, 616, 707
 Jost, J. P., 934, 940,
 943, 958, 967

- Jourdian, D. M., 458
 Jourdian, G. W., 602, 621
 Jovin, T. M., 313
 Jowsey, J., 592
 Juergens, W. G., 941
 Jukes, T. H., 146
 Julian, T., 481
 Julien, J., 209
 Jungblut, P. W., 965
 Junge, W., 394, 398, 399,
 401, 402, 403
 Jurkowitz, L., 965
 Jutila, J. W., 875
 Jutisz, M., 504, 511, 512,
 514
 Jutting, G., 758, 761, 764,
 771
- K
- Kaback, H. R., 561-98; 430,
 563, 564, 565, 569, 570,
 571, 572, 573, 574, 575,
 577, 578, 581, 583, 586,
 590
 Kabasawa, I., 603, 605, 612,
 618
 Kabat, E. A., 601, 606, 608,
 613, 614
 Kabat, S., 146, 147, 148,
 198, 213, 215
 Kacsar, H., 474
 Kadenbach, B., 271, 276
 Kadota, K., 401
 Kaempfer, R., 261
 Kaerner, H. C., 536, 537,
 543
 Kaeberg, P., 235, 245,
 529, 530, 531, 532, 533,
 537, 538
 Kafatos, F. C., 931, 967
 Kagawa, Y., 273
 Kahlenberg, A., 591
 Kahn, J. S., 402
 Kahnt, F. W., 847
 Kai, M., 370
 Kainuma, R., 311
 Kaiser, 862
 Kaiser, A. D., 707
 Kaiser, D. G., 324
 Kaiser, W., 270, 279,
 371
 Kaita, A. A., 793, 794
 Kaizer, H., 532, 539
 Kajit, H. K., 832
 Kajita, A., 1003
 Kakefuda, T., 163, 169,
 740
 Kakuchi, K., 856
 Kakunaga, T., 828, 835
 Kakuno, T., 680, 682, 685,
 691, 692
 Kalberer, P. P., 413, 415
 Kalf, G. F., 257, 262
 Kalina, M., 287
 Kallenbach, N. R., 133
 Kallfelz, F. A., 592
 Kalman, S. M., 821, 824,
 826, 827, 830
 Kaloustian, H. D., 662
 Kalse, J. F., 874
 Kamat, V. B., 601, 630
 Kamber, B., 843, 847,
 848
 Kamberi, I. A., 516
 Kamel, M. Y., 654
 Kamen, M. D., 673-700;
 121, 673, 674, 676, 678,
 680, 681, 682, 685, 686,
 688, 689, 690, 691, 692,
 693, 694, 695
 Kamen, R., 545, 546,
 548
 Kamin, H., 868, 881
 Kamiyama, S., 604
 Kamin, O., 505, 506, 517
 Kammen, H. O., 294
 Kamogawa, A., 568
 Kamoshita, S., 349
 Kampa, L., 991
 Kanagalingam, K., 192, 194,
 217
 Kananen, G., 869
 Kanaka, Y., 107, 117
 Kanarek, L., 103
 Kanazawa, T., 591
 Kandel, E. R., 788
 Kandler, O., 403, 412
 Kaneda, T., 324, 325,
 329
 Kaneko, H., 528, 628,
 835
 Kaneko, T., 807
 Kang, A. H., 612
 Kang, H. S., 712
 Kannan, K. K., 64
 Kanoh, H., 367
 Kano-Sueoka, T., 967
 Kant, K., 801
 Kanter, H. E., 483
 Kantor, F. S., 900
 Kanungo, M. S., 661
 Kaplan, A., 894
 Kaplan, A. S., 706, 710,
 714
 Kaplan, A. P., 890
 Kaplan, H., 88
 Kaplan, J. H., 393
 Kaplan, N. O., 27, 28,
 661, 662
 Kaplan, S., 301
 Kapoulas, V. M., 344, 345
 Kappas, A., 941, 961
 Kara, J., 710, 743
 Karasaki, S., 201, 202
 Karczmars, A. G., 835
 Karkhanis, Y. D., 119
 Karlin, A., 788
 Karlish, S. J. D., 396,
 397, 400, 401, 402, 403
 Karlsson, P., 802
 Karlsson, K.-A., 343, 344
 Karlsson, R., 868
 Karlsson, S., 861
 Karlstrom, O., 298, 299,
 308, 309, 310
 Karmin, M., 830
 Karnovsky, M. L., 13
 Karol, M. H., 257
 Karon, M., 952
 Karpatkin, S., 655
 Karr, G. M., 659
 Karstadt, M., 460
 Kartha, G., 64, 65, 69,
 70, 92, 111, 853
 Karush, F., 115, 898,
 900, 909
 Kasai, T., 139, 144
 Kashket, E. R., 581
 Kashnig, D. M., 601, 630
 Kasper, C. B., 601, 630
 Kass, S. J., 705
 Kastin, A. J., 501, 504,
 505, 507, 508, 512, 513,
 514, 515, 516, 517, 518,
 519, 520, 521, 522
 Kasunose, M., 337
 Katagiri, M., 686, 687
 Katchalski, E., 601, 603,
 605, 612
 Kates, M., 323-58; 327,
 332, 334, 336, 338, 342,
 343, 350
 Kathan, R. H., 601, 614,
 629
 Kato, I., 859
 Kato, M., 717, 796
 Kato, R., 830
 Kato, T., 857, 860
 Katzoyannis, P. G., 842,
 849
 Katterman, F. R. H., 187
 Katz, B., 778, 788, 790
 Katz, G., 244
 Katz, M., 901
 Katz, R. I., 813
 Katz, S., 209
 Katz, S. H., 519, 520
 Katzen, H. M., 655, 950,
 954
 Kaudewitz, F., 277, 279
 Kaufman, B. T., 102
 Kaufmann, B. P., 155
 Kauzmann, W., 467
 Kaverzneva, E. D., 111
 Kawade, Y., 229, 230
 Kawahara, K., 40, 41
 Kawanami, J., 350
 Kawasaki, K., 844
 Kawashima, T., 965
 Kawauchi, S., 408
 Kay, E., 601
 Kay, L., 88
 Kayalp, S. O., 822
 Kaye, A. M., 709, 712
 Kayne, M. S., 661
 Kaziro, Y., 374, 757, 758,
 759, 760, 762, 764, 769
 Kazuno, T., 324
 Ke, L., 69
 Kearney, E. B., 877

AUTHOR INDEX

- Keats, A. S., 830
 Keay, L., 876
 Keck, K., 298, 306, 309
 Kedes, L. H., 965
 Keech, B., 763
 Keech, D. B., 762
 Kehr, W., 329, 333
 Keil, B., 119
 Kellin, D., 674, 677, 683
 Keir, H. M., 707
 Keister, D. L., 398, 402
 Kellenberger, E., 275, 301, 312
 Kellenberger, G., 706
 Keller, H. U., 905
 Keller, J. M., 350
 Kellerman, M., 69, 84, 87
 Kellett, G. L., 999, 1000, 1001
 Kelley, W. N., 813
 Kelling, D. G., 210
 Kelly, D. M., 67, 68
 Kelly, H., 119
 Kelly, R. B., 536, 541, 542, 543, 550
 Kelly, W., 330, 337
 Kelmers, A. D., 229
 Kelus, A. S., 893
 Kemp, P., 346, 369
 Kemp, R. G., 104, 447, 642, 648, 657
 Kempner, E. S., 430
 Kendall, S. M., 296
 Kendrew, J. C., 65, 66, 979, 984, 987, 1028, 1029
 Kennan, A. L., 937, 965, 967
 Kennedy, B. J., 296
 Kennedy, E. P., 567, 578, 579, 580, 581, 654
 Kennedy, J. S., 835
 Kennell, D., 141
 Kenner, R. A., 88, 119
 Kenney, F. T., 932, 934, 940, 943, 945, 946, 947, 948, 955, 956, 964, 965, 967, 968
 Kent, P. W., 601, 612
 Kenworthy, P., 877
 Kepes, A., 570, 578
 Keränen, A. J. A., 330
 Keresztes-Nagy, S., 28, 58, 114
 Kerker, M., 474
 Kerkut, G. A., 788
 Kern, J., 724, 730
 Kerr, D. S., 463
 Kerson, L. A., 475, 476
 Kesler, R. B., 602
 Kessel, D. H., 584
 Kessler, W., 855
 Ketchum, P. A., 458
 Ketti, H., 842
 Kety, S. S., 813
 Keutmann, H. T., 847, 848
 Keynes, R. D., 789
 Kézdy, F. J., 84, 85, 121
 Khairallah, E. A., 934, 940, 943, 948
 Khan, R. T., 791
 Khorana, H. G., 233, 242, 244
 Khurl, P. D., 989
 Khym, J. X., 243
 Kida, S., 431, 433, 434
 Kidston, M. E., 215
 Kidwell, J. R., 713, 716
 Kiefer, B. I., 215
 Kielley, W. W., 592
 Kierkegaard, P., 868
 Kieslich, K., 485
 Kihara, H., 813
 Kihara, T., 398
 Kijima, S., 174
 Kijimoto, S., 678
 Kikuchi, G., 674, 676, 1016
 Kilbourne, B. T., 395
 Kilburn, E., 938, 940, 943, 959
 Killam, K. F., 786
 Kilmarin, J. V., 106, 981, 1011, 1012, 1014, 1016, 1030, 1031
 Kim, J. H., 602, 951
 Kim, K. H., 852
 Kim, S., 877
 Kim, S. J., 41
 Kim, Y. S., 932, 934, 946, 957, 958
 Kimes, R., 705, 723, 724, 725, 726
 Kimmel, J. R., 89
 Kinoto, S., 844
 Kimura, A., 350
 Kimura, F., 237, 239, 244
 Kindel, P. K., 409
 King, A. S., 743
 King, E. L., 489
 King, G. S., 736
 King, J., 644
 King, J. L., 146
 King, M., 490
 King, T. E., 692
 King, T. P., 107, 116
 Kingma, A., 984, 1014
 Kinkade, J. M., Jr., 170, 173
 Kinomura, Y., 844
 Kinsella, J. E., 338
 Kinsolving, C. R., 591
 Kiplinger, G. F., 831
 Kipnis, D. M., 650
 Kirby, K. S., 184, 188, 217
 Kircher, C., 778
 Kiritani, K., 430
 Kirk, M., 403, 407, 412, 414, 417
 Kirkpatrick, M. A., 580
 Kirkwood, C. R., 113
 Kirkwood, J. M., 736
 Kirschner, R. H., 256
 Kirschner, A. G., 40, 41, 58, 1000, 1001
 Kirsner, N., 803
 Kirsten, W. H., 744
 Kirtley, M. E., 487
 Kisaki, T., 419
 Kishida, Y., 856
 Kisic, A., 350
 Kiesel, J., 833
 Kisters, R., 613
 Kit, S., 709, 710, 711, 712, 717, 721, 730, 944
 Kitahara, T., 717
 Kito, M., 362
 Kittel, C., 59, 788
 Kittredge, J. S., 344
 Klapper, M. H., 27, 28, 40
 Kleinhauer, E. F., 984, 988
 Klein, E., 944
 Klein, G., 714, 717
 Klein, J. R., 881
 Kleinfield, R. G., 207
 Kleinschmidt, A. K., 705, 759, 762
 Kleinsmith, L. J., 171, 173
 Klemperer, E., 192
 Klemperer, F. W., 12
 Klenk, E., 348
 Kleopina, G. V., 111
 Kleppe, K., 601, 602, 641, 876
 Klett, R. P., 313
 Klevecz, R. R., 945
 Kline, J. E., 806
 Kline, M. H., 591
 Klinenberg, J. R., 813
 Klingenberg, M., 686
 Klingman, G. L., 832, 833
 Klink, F., 460
 Klostermeyer, H., 69
 Klotz, I. M., 25-62; 27, 28, 40, 41, 50, 58, 59, 102, 103, 114, 467
 Klouwen, H., 281
 Kluchareva, T. E., 717
 Klug, A., 34, 36, 38, 39, 194, 533
 Klyucheva, V. V., 567
 Knaggs, J. A., 346, 369
 Knappe, J., 757-76; 757, 758, 760, 761, 764, 768, 769, 770, 771
 Knecht, J., 616, 627
 Knight, C. A., 705
 Knight, E., Jr., 185, 206, 209, 212, 259, 263, 870, 871
 Knight, W. S., 534
 Knights, B. A., 338
 Knisely, M. H., 485
 Knobil, E., 519, 520
 Knoche, H. W., 350

- Knof, S., 27
 Knolle, P., 547,
 552
 Knopp, H. A., 897
 Knopp, J. A., 897
 Knowles, B. B., 720
 Knowles, J. R., 70, 71, 74,
 113, 117
 Knowles, P. F., 870
 Knox, J. R., 64, 68, 92
 Knox, W. E., 877, 930,
 934, 947, 948, 949, 950,
 955, 957, 958, 964
 Knudson, A. G., Jr., 346,
 741
 Kobara, T. Y., 953
 Kobata, A., 621, 624
 Kobayashi, M., 239
 Koch, A. L., 303, 578,
 943
 Koch, B., 676
 Koch, H. J., 485
 Koch, J., 255, 256
 Koch, M. A., 705, 706,
 707, 714
 Kochetkov, N. K., 240, 241
 Kochman, M., 28, 36
 Kocy, O., 850
 Kodama, T., 677, 689
 Koe, B. K., 832
 Koekoek, R., 64, 65, 69,
 70, 89, 90, 91, 107
 Koenig, W. A., 861
 Koerber, B. M., 487
 Koerner, J. F., 291-322;
 301, 303, 313, 314, 315
 Koffler, H., 119
 Koh, P., 641
 Kohl, D., 145
 Kohl, D. M., 166
 Köhler, H., 893, 894
 Kohler, P. O., 941
 Kohlschutter, A., 381
 Kohne, D. E., 135, 136, 137,
 138, 141, 142, 146, 177,
 931, 966
 Kohno, H., 640
 Koike, K., 26, 27, 35, 57, 59
 Koike, M., 443, 444, 445,
 873, 874
 Koike, T., 237
 Koivusalo, M., 780
 Kojima, T., 626
 Kok, B., 416, 417, 418,
 419
 Kokka, N., 828
 Kolattukudy, P. E., 324,
 325
 Kolb, E., 647
 Kolber, A. R., 579
 Koier, R. D., 660, 661, 986
 Kolin, V., 197
 Kölisch, E., 912
 Komai, H., 883
 Kon, H., 992, 1028
 Kondo, N., 184
 Kühnig, W., 846
 Konigsberg, W., 122, 532,
 533, 538, 1016
 Konigsberg, W. H., 114
 Konigsberg, W. M., 1016
 Konings, W. N., 114
 Kono, M., 196, 197, 199
 Kono, T., 664
 Konrad, C. G., 164
 Kontilainen, S., 904
 Koob, J. L., 343, 348,
 350
 Kopka, M. L., 69
 Koponen, T., 904, 905
 Koprowski, H., 715, 720
 Koritz, S. B., 270, 276,
 279
 Korn, E. D., 59
 Kornacker, M. S., 937,
 954
 Kornberg, A., 293, 294,
 297, 298, 301, 302, 303,
 305, 309, 311, 313, 329,
 336, 346, 373, 583, 707
 Kornberg, H. L., 409,
 416, 660
 Kornberg, S. R., 294,
 301, 302, 303, 309
 Korner, A., 934, 957, 967
 Kornetsky, C., 622, 630,
 831
 Kornfeld, R., 624
 Kornfeld, S., 115, 624
 Kortschak, H. P., 404, 405,
 Kosawa, T., 315
 Kosland, D. E., Jr., 26,
 59, 71, 74, 77, 80, 83, 84,
 88, 117, 119, 120, 121,
 487, 825, 1035
 Kosow, D. P., 656
 Kosower, E. M., 868
 Kostellow, A. B., 569,
 578, 586, 590
 Koster, J. F., 874, 879,
 882
 Kosterlitz, H. W., 828, 835
 Kostetsky, E. Y., 338
 Kostianinen, E., 904, 905
 Kotaka, T., 134, 136, 146
 Kotaki, A., 116, 878, 879,
 880, 881, 882
 Kotani, M., 692, 991, 992
 Koutecka, E., 550
 Koval, G. J., 591
 Kowalik, J., 482
 Koyama, J., 674
 Kozloff, L. M., 300, 303,
 315
 Kozlov, J. V., 167
 Kraaijenhof, R., 390, 391,
 393, 399
 Kraemer, K., 202
 Kragt, C. L., 521
 Krah, M. E., 656, 954
 Krakoff, I. H., 296, 312
 Krakow, J. S., 460
 Kramer, J. H., 737
 Kramer, J. K. G., 335
 Kraml, J., 272
 Krauskopf, M., 230
 Kraut, J., 64, 65, 69, 70,
 83, 84, 87, 88, 119, 122
 594
 Kravchenko, N. A., 111
 Kravitz, E. A., 790, 792
 Kream, J., 298
 Krebs, E. G., 447, 448,
 640, 642, 643, 648, 657,
 661
 Krebs, H. A., 409, 936
 Kredich, N. M., 462, 463
 Kress, L. F., 109, 115
 Kreutner, W., 652
 Krishna, G., 649
 Krisman, C. R., 654
 Kritchevsky, G., 346
 Krivacic, J., 987
 Krivit, W., 348
 Krivoj, W., 830
 Kroeger, H., 168
 Kroon, A. M., 253, 254,
 255, 259, 271, 273, 280,
 283
 Krooth, R. S., 813, 945,
 964
 Krotkov, G., 406, 416,
 417
 Kruckenberg, P., 484
 Kruger, J., 490
 Krulich, L., 519, 520
 Krumdieck, C. L., 861
 Krumkalns, E. V., 846
 Kruse, P. F., Jr., 944
 Krutilina, A. I., 237, 244
 Krzanowski, J., 657
 Ku, E., 84
 Ku, H. S., 869
 Kubinski, H., 707, 725
 Kubo, H., 881
 Kuby, S. A., 294
 Kuechler, E., 145
 Kuehl, F. A., 649
 Kuehn, G. D., 26, 59
 Kuff, E. L., 255
 Kuksis, A., 333, 340
 Kukuchi, Y., 856
 Kulczycki, A., Jr., 895,
 899
 Kumagai, H., 592
 Kumar, A., 184
 Kume, S., 591
 Kummerow, F. A., 601
 Kundig, F. D., 562, 563,
 564, 565, 566, 567, 568,
 569, 571, 575, 577, 580,
 581, 589, 654
 Kundig, W., 369, 378, 562,
 563, 564, 565, 566, 567,
 568, 569, 571, 575, 577,
 580, 581, 589, 654
 Kung, G., 138, 145, 165,
 167, 174, 175
 Kung, G. M., 966
 Kung, H., 244
 Kung, Y., 69

AUTHOR INDEX

- Kunkel, H. G., 891, 897
 Kunsch, U., 662
 Kuntzel, H., 184, 185, 186,
 258, 260, 261, 273, 274
 Kuntzman, R., 960
 Kuo, C. H., 544, 545, 546,
 547, 548
 Kuo, J. F., 642, 686, 687
 Kupchyk, L., 662
 Kupferberg, H. J., 824
 Kurahashi, K., 568
 Kurganova, B. I., 59, 477
 Kurimura, T., 712
 Kuriyama, K., 790
 Kuriyama, Y., 938, 940, 960,
 961
 Kurland, C. G., 184, 196, 199
 Kurland, R. J., 990
 Kurn, N. A., 860
 Kuroda, M., 881
 Kurokawa, M., 796
 Kuroshima, A., 521
 Kusai, K., 678
 Kusunose, M., 366
 Kutschera, J., 490
 Kutter, E. M., 304, 305,
 310, 311
 Kuwaki, T., 646
 Kuylenstierna, B., 266, 267
 Kuzela, S., 278
- L
- Labach, J. P., 343
 Labat, J., 119
 Labouesse, B., 84, 115
 Labrie, F., 934, 957, 967
 Lacave, C., 329
 Lachance, J. P., 758, 761,
 764, 771
 Lacour, F., 740, 745, 746
 Lacroute, F., 466
 Lacy, S., Sr., 724, 740
 Lado, P., 257, 264
 Ladzunski, M., 84
 Laetsch, W. M., 406
 Laguens, R. P., 257
 Lahav, M., 374, 376
 Lai, C. Y., 110, 658
 Laico, M. T., 619, 622
 Laine, I. A., 395
 Laing, R., 204, 205
 Laird, C. D., 134, 135, 136,
 138, 141, 142, 145, 146
 Laird, H. M., 737
 Lajtha, A., 778
 Lake, B. D., 813
 Laki, K., 601, 604, 628
 Lalancet, S. G., 228
 Laman, V. R., 990, 1009
 Lamar, C., Jr., 965, 967
 Lamb, A. J., 275
 Lamb, R. G., 360
 Lamelein, J. P., 910
 La Mer, V. K., 15
 Lamers, K., 40
 Lampen, J. O., 298, 601
- Lampert, D. T. A., 601, 609,
 613, 618
 Lamy, F., 583
 Landon, M., 83, 88
 Lands, W. E. M., 360, 361,
 362, 363, 364, 366, 378
 Landsteiner, K., 908
 Landy, A., 140, 244
 Lane, B. G., 188, 189,
 190, 191, 192, 217
 Lane, D., 131, 136
 Lane, J. M., 612
 Lane, M. D., 407, 408,
 758, 759, 760, 762, 763,
 764, 769, 771, 773
 Lane, W. T., 717, 722,
 730
 Lanéele, G., 351
 Lanéele, M. A., 329
 Lang, P. G., 915
 Langan, T. A., 172, 642,
 967
 Lange, R., 107
 Langerman, N. R., 25-62;
 41, 50, 467
 Langham, W. H., 169, 173
 Langley, O. K., 601, 630
 Langlois, A. J., 738, 740
 Langridge, R., 194, 542, 546
 Lanham, U. N., 280
 Lanza, T., Jr., 856
 Lapidot, Y., 341
 Lapierre, C. M., 969
 Lapp, D., 625
 Lardy, H. A., 294, 430,
 655, 657, 868, 870, 938,
 937, 951
 Laredo, J. A., 338
 Lark, K. G., 162, 213
 Larkum, A. W. D., 482
 Larner, J., 639-72;
 447, 448, 640, 643, 644,
 645, 646, 647, 650, 651,
 652, 653
 Larrabee, A. R., 452, 453,
 454
 Larsen, C. J., 209, 211,
 745, 746
 Larsson, A., 295, 296,
 298, 299, 871, 873
 Lasagna, L., 822
 La Salle, L., 263, 264
 Lascelles, J., 686
 Laskowski, M., Sr., 109,
 115
 Laszlo, J., 942
 Latarjet, R., 707
 Latham, H., 201, 202, 207,
 208
 Latham, H. G., 119
 Latzko, E., 403, 413, 414,
 416, 419
 Laudat, P., 813
 Laue, P., 562, 567
 Laurent, T. C., 296, 871
 Lauris, V., 656
 Lauterborn, W., 660
- Lauwers, A., 277
 Lavallee, R., 144
 Lavarria, J. M., 447
 Laver, W. G., 726
 Law, J. H., 331, 366
 Lawford, G. R., 618,
 622
 Lawley, P. D., 240
 Lawrence, H. S., 910,
 913, 914
 Lawrence, W. C., 726,
 727
 Lawson, W. B., 229
 Lay, W. H., 912, 913
 Layani, M., 881
 Laycock, D. G., 965
 Lazarus, H. M., 717
 Lazarus, N. R., 27, 105,
 106
 Lazdunski, M., 117, 121
 Lazer, L., 28
 Leahy, M., 618, 622
 Leavitt, C. A., 640
 Leberman, R., 27, 101,
 102, 113, 114
 Lebherz, H. G., 28, 36,
 658
 Leblond, C. P., 200, 622,
 629
 Lebovitz, H. E., 610, 628,
 893, 896
 LeCompte, P. M., 629
 Ledeen, R., 349
 Lederberg, T., 163
 Ledinko, N., 727, 730
 Lee, B., 64, 68, 92
 Lee, D. K., 458
 Lee, G., 878
 Lee, J. C., 231, 233, 234,
 240, 245, 530
 Lee, K. L., 946
 Lee, S. H., 268
 Lee, Y. C., 602, 604,
 605, 606, 608, 610, 615
 Lee, Y.-P., 570, 580,
 937
 Lee-Huang, S., 58
 Leeman, S. E., 802
 Lees, G. M., 828, 835
 Le Fevre, P. G., 477, 578,
 593
 Leff, J., 253
 Le Gall, J., 690, 693, 694,
 870, 871
 Legari, J. J., 334
 Legg, M. A., 629
 Legge, J. W., 978
 Lehane, D. P., 347
 Lehman, I. R., 293, 298,
 313, 314, 315
 Lehmann, H., 53, 55, 56,
 983, 984, 985, 986, 988,
 998, 1030
 Lehnhardt, W. F., 602
 Lehninger, A. L., 395,
 449, 789, 797
 Lehrer, R. I., 876

- Leibovitz, Z., 381
 Leibowitz, S. F., 783
 Leighton, F., 947
 Leijonmarck, M., 868
 Leikola, E., 351
 Leive, L., 197, 583,
 976
 LeJohn, H. B., 27
 Lekim, D., 372
 Leloir, L. F., 447, 448,
 654
 Lelong, J. C., 209,
 211
 Lemberg, R., 675, 677,
 978
 Lenar, J., 382
 Lenard, J., 114
 Lenaz, G., 266,
 277
 Leng, M., 171
 Lengyel, P., 461,
 462
 Lenhoff, H. M., 787
 Lennartz, W. J., 359-88;
 328, 362, 369, 374, 375,
 376
 Lennox, E. S., 431,
 436
 Leon, S. A., 258, 265
 Lepage, M., 331
 Lepoutre, L., 532
 LeQuenne, M., 871
 Lergier, W., 508
 Lerman, L. S., 859
 Lerner, A. M., 217
 Lerner, S. A., 566
 Leak, A. M., 298
 Leskovac, V., 121
 Lesskowitz, S., 909
 Lester, R. L., 337, 347,
 368, 370
 Lesuer, A., 809
 Leterrier, F., 870, 871,
 991, 993
 Leuchars, E., 916,
 917
 Leurs, M. M. C., 725
 Levenberg, B. J., 767
 Levere, R. D., 813
 Levey, G. S., 807
 Levi-Montalcini, R., 806
 Levin, M. J., 717
 Levin, O., 35, 37
 Levin, W., 960
 Levin, W. B., 412,
 415
 Levine, A. J., 712
 Levine, A. S., 717, 727,
 728
 Levine, B. B., 908, 909,
 911, 912
 Levine, L., 58
 Levine, M., 593
 Levine, S. D., 850, 851,
 852
 Levinthal, C., 197, 300,
 474, 551
 Levinthal, M., 566, 567,
 568, 569, 581, 654
 Levintow, L., 528
 Levisohn, R., 545, 546,
 547, 548
 Levitan, I. B., 947
 Levitz, M., 813
 Levy, H. R., 759
 Levy, J. A., 296
 Levy, J. P., 739
 Levy, M., 266, 270,
 806, 951
 Lew, J. Y., 601
 Lewandowski, L., 199
 Lewis, A. M., 730
 Lewis, E. B., 168
 Lewis, G. P., 828
 Lewis, M. S., 40
 Lewis, V. J., 329
 Lezzi, M., 168
 Li, C. H., 109, 518
 Li, L., 237, 244
 Li, P. H., 209
 Li, S.-C., 602,
 618
 Li, T. K., 993, 995,
 1004
 Li, Y.-T., 601, 602,
 618
 Liang, C. R., 338, 344
 Liao, S., 965
 Liao, T.-H., 602,
 610
 Liu, M. C., 201,
 206
 Libonati, M., 543,
 546
 Licerio, E., 601, 606,
 608, 613, 614
 Lichtenstein, H. C., 772
 Lichtenstein, J., 309
 Lichter, E. A., 893
 Lieb, K., 686, 687
 Lieberman, E. A., 395,
 402
 Lieberman, I., 294, 296,
 312, 945
 Lieberman, R., 601, 608,
 615
 Lielaisis, I., 275,
 301
 Liem, H. H., 13, 686,
 687
 Liener, I. E., 109, 123,
 601
 Liepkalns, V., 369
 Light, A., 89, 109
 Likhtenstein, A. V., 144
 Lilenthal, J. L., Jr., 947
 Liljas, A., 64
 Lima-De-Faria, A., 215
 Limetti, M., 869
 Lin, E. C. C., 565, 566,
 567, 568, 569, 570, 580,
 581, 654, 930, 955
 Lin, J.-Y., 533
 Lin, M. C., 111
 Lin, T. Y., 77
 Lin, Y., 116
 Lindenmayer, G., 201
 Linderström-Lang, K., 968
 Lindner, E. B., 518
 Lindsay, D. T., 145,
 861
 Lindsay, J. R., 828
 Lindskog, S., 119
 Lindsley, D. L., 201, 213,
 214, 215, 216
 Lines, J. G., 986
 Ling, A. M., 762
 Ling, C. M., 549
 Ling, G. M., 656,
 950
 Lingrel, J. B., 145
 Link, T. P., 121
 Linn, S., 314
 Linn, T. C., 445, 446,
 447
 Linnane, A. W., 184, 185,
 258, 265, 271, 272, 273,
 274, 275, 278
 Linscott, W. D., 912
 Lints, C. E., 832
 Lipmann, F., 392, 460,
 461, 592
 Lipscomb, H. S., 517,
 518
 Lipscomb, W. N., 64, 65,
 68, 69, 70, 72, 77, 78, 79,
 80, 81, 82, 83, 117, 465,
 466
 Lipssett, M. N., 133
 Lis, H., 601, 603, 605,
 612
 Lischner, H. W., 917,
 918
 Lisk, R. D., 807
 Lisker, R., 986
 Lister, R. E., 821, 822,
 824, 826
 Litchfield, C., 333
 Litt, H., 192, 193
 Litt, M., 229
 Littau, V. C., 162, 164,
 167, 168
 Littauer, U. Z., 192, 193,
 194, 230
 Little, C., 102
 Little, J. R., 903, 909
 Littlefield, J. W., 711,
 720, 944, 964
 Litma, E., 209
 Liu, W.-K., 109, 116
 Liu, T.-Y., 107
 Live, T. R., 311
 Livermore, B. P., 330
 Liversedge, F., 105
 Livingston, R. B., 785, 786
 Lloverase, J., 187, 381
 Lloyd, K. O., 601, 606,
 608, 613, 614
 Lloyd, L., 218, 219
 Lo, G. B., 518
 LoBuglio, A. F., 912

AUTHOR INDEX

- Lochmuller, H., 758, 760
 769
 Locker, A., 474
 Lockwood, D. H., 941
 Lodish, H. F., 528, 530,
 532, 533, 535, 536, 537,
 538, 539, 540, 541, 543,
 544, 549, 550
 Loeb, J. N., 271
 Loeb, T., 529, 530,
 534
 Loebel, J. E., 244
 Loening, U. E., 174, 184,
 185, 186, 188, 203, 204,
 205, 215, 216
 Lovb, E., 856
 Loewus, M., 169
 Loffet, A., 854
 Loftfield, R. B., 939, 940,
 942
 LoGrippo, G. A., 913
 Loh, H. H., 798, 830,
 832
 Loke, J. P., 41
 Loken, S. C., 663
 Lomax, P., 822
 Lombard, A., 1020
 Lonberg-Holm, K., 726,
 727
 London, I. M., 931, 966,
 967
 London, W. P., 477
 Long, C. W., 295
 Long, D., 602
 Long, G. L., 662
 Long, J. M., 518
 Long, J. P., 835
 Longley, R. P., 338
 Longmore, W. J., 3, 10,
 13
 Look, M., 829, 830
 Loomis, R. S., 407, 416,
 417
 Loomis, W. F., 575
 Lopez-Mondragon, R., 664
 Lopiekies, D. V., 787
 Lorand, L., 592
 Lorch, E., 758, 761, 764,
 771
 Lorence, J. H., 441
 Lorenson, M. Y., 657
 Lorenz, K., 781
 Lorenzoni, I., 969
 Lorini, M., 268
 Lorkin, P. A., 985
 Losada, M., 411, 661
 Lotti, V. J., 822
 Loudon, G. M., 121
 Love, D. S., 447, 448
 Love, W. E., 983
 Lovenberg, W., 871
 Loverde, A., 115
 Lowe, G., 76, 77, 89, 90,
 91, 106
 Lowe, H. J., 871, 881
 Lowe, M., 39
 Lowenstein, J. M., 324, 937
 Lowey, S., 895, 899
 Lowry, O. H., 647
 Lowy, B. A., 187
 Lowy, J., 87
 Lu, L. W., 119
 Lubbers, D. W., 474
 Lubin, M., 199, 362,
 584, 944
 Lubke, K., 841
 Luborsky, S. W., 740
 Lucas, Z. J., 309, 315
 Lucas-Lenard, J., 460
 Luchi, P., 877
 Luck, D. J. L., 186, 187,
 188, 213, 253, 254, 256,
 258, 261, 263
 Luck, J., 173
 Lüderitz, O., 350
 Ludwig, L. J., 412, 414,
 416
 Ludwig, M. L., 65, 68, 69,
 70, 77, 78, 79, 80, 82,
 83, 117, 871
 Lukanidin, E. M., 174
 Lukins, H. B., 265, 271,
 275, 278
 Lukoyanova, M. A., 673,
 688
 Lukton, A., 121, 448,
 449
 Lumry, R., 71, 72, 73,
 491, 994, 1007, 1010
 Lundberg, W. O., 331
 Lundblad, R. L., 117
 Lundholf, L., 648
 Lundholm, L., 648
 Lundholm, U. I., 644
 Lundin, B., 296, 297
 Lundin, J., 64
 Lunger, P. D., 735
 Lunt, M. R., 536, 550
 Luria, S. E., 140, 302,
 303, 312, 580
 Lusty, C. J., 873
 Lutes, R. A., 619
 Luthy, J. A., 877
 Lux, M., 380
 Luzzati, A., 1001
 Luzzati, V., 192, 573
 Lyle, L. R., 875
 Lyman, H., 389
 Lyman, R. L., 366
 Lyman, F., 368, 449, 452,
 453, 454, 455, 456, 457,
 757, 758, 759, 760, 761,
 762, 763, 764, 769, 771,
 773, 938, 959
 Lynn, W. S., 400,
 403
 Lyon, J. B., 648
 Lyon, M. F., 167
 Lyons, L. B., 552
 Lyons, M. J., 739
 Lyster, R. L. J.,
 482
 Lyttleton, J. W., 184
 260
- Maas, W. K., 566
 Maass, G., 709,
 712
 MacBride, W. D., 730
 MacBrinn, M. C., 340,
 627
 MacCallum, W. G., 14
 Macchia, V., 807
 MacDonald, G., 368
 MacDonald, R. E., 199,
 562, 567
 MacDougall, J. C., 336,
 346
 Macduff, G., 1000, 1005,
 1006
 Macey, R. I., 396
 MacGregor, H. C., 215
 MacHattie, L. A., 136,
 147, 705, 723, 724, 725
 Machida, M., 107
 Machiyama, Y., 481, 796
 Macieira-Coelho, A., 743
 MacIndoe, H. M., 184
 MacKchnie, C., 213
 Mackenzie, C. G., 869,
 870
 MacKler, B., 254
 MacLean, I., 331
 MacLennan, D. H., 282
 MacLeod, R. M., 521
 MacPherson, I., 720, 721
 Macrae, A., 327
 Madden, S. C., 953
 Maddy, A. H., 585
 Maden, B. E. H., 208
 Madison, J. T., 195, 228,
 244
 Madras, B. K., 951
 Madsen, N. B., 641, 880
 Maeda, N., 1003
 Maeno, H., 26, 27, 35, 59
 Magasanik, B., 165, 575,
 951
 Mage, M. G., 890
 Mage, R., 892, 893
 Magee, W. S., Jr., 133
 Mager, H. I. X., 868
 Mager, M., 662
 Maggio, R., 184
 Magnus, D. R., 947
 Mahadevan, S., 625, 626,
 627
 Mahajan, K. P., 869
 Mahler, H. R., 254, 257,
 258, 264, 265, 271, 272,
 298, 306, 309
 Mahowald, T. A., 3, 9
 Maickel, R. P., 822,
 829
 Main, P., 37
 Maior, J. J., 152, 153, 154,
 155, 169, 178
 Mair, G. A., 64, 65, 69,
 70, 74, 75, 76, 111
 Maitra, P. K., 486
 Maizel, J. V., Jr., 705, 726

- Majerus, P. W., 452, 453,
454, 938, 940, 943, 959
Majumdar, C., 309
Mak, S., 713, 726, 727,
728, 729
Makela, O., 890, 903, 904,
905, 913
Makino, M., 602, 604, 605,
626
Makinodan, T., 911, 913,
915
Makinose, M., 592
Makisumi, S., 857
Makita, A., 348
Malamby, M. H., 582
Malathil, P., 664
Malcovati, M., 660
Maley, F., 306, 602, 605,
626
Maley, G. F., 306
Malhotra, S. K., 281
Mallia, A., 378
Maling, B., 133
Malins, D. C., 326, 334,
335, 364
Malkin, I., 202
Malkin, R., 870
Malkinson, A. M., 431,
432, 433
Malm, R. B., 780
Malone, B., 335, 364
Maloney, J. V., 483
Mandel, L. R., 649
Mandel, M., 253
Mandel, P., 143
Mandel, T., 905
Mandeleos, S., 231, 233,
235, 239, 245
Mandelstam, J., 931
Mangiartotti, G., 198, 197,
198, 213
Mangiartotti, M. A., 969
Mangold, H. K., 334, 335,
342, 343
Manjeshwar, R., 936
Mann, K. G., 26, 27
Mann, S. A., 641
Mannik, J. A., 910
Mannik, M., 895
Manning, J. M., 860
Manohar, S., 783
Manor, H., 200
Manson, W., 483
Mansour, T. E., 657,
658
Mantle, J., 475, 476,
490
Marai, L., 333, 340
Marbaix, G., 145
Marcaud, L., 931,
966
March, C. H., 829, 830
Marchand, C., 822
Marchant, R., 916, 917
Marchant, R. H., 392
Marchiava, P. L., 784
Marchis-Mouren, G., 954
Marcker, K. A., 244,
280
Marco, R., 267, 268, 656
Marcot-Queiroz, J., 209
Marcus, A. J., 340
Marcus, D. M., 621, 624
Marcus, G., 900
Marcuson, E. C., 906
Marchal, L. R., 651
Marek, R., 443, 444
Margaret, J. P., 912
Marglin, A., 841-866;
849
Margolinash, E., 69, 630,
693
Margolin, S., 822
Margolis, F., 601
Marin, G., 718, 720
Marinetto, G. V., 324
Markovich, V. A.,
601
Marino, R., 459, 460,
536, 550
Marinozzi, V., 201, 202,
260
Mark, F. G., 84
Marker, A. F. H., 403,
419
Markert, C. L., 28, 661,
662
Markham, R., 242
Markland, F. S., 83, 88,
119
Markley, J. L., 112
Marks, G. S., 608
Marks, P. A., 952
Markstein, P., 491
Markus, G., 58
Marier, E., 616,
617
Marimur, J., 131, 136, 137,
138, 140, 211, 213, 214,
254, 255
Maroux, S., 84
Marquardt, R. R., 659
Marquisee, 195, 199,
244
Marriott, W. McK., 14
Marsden, J. R., 334
Marsh, B. B., 592
Marsh, H. V., 417
Marsh, J. B., 338
Marsh, R. E., 69
Marshall, C. L., 336
Marshall, R. D., 601, 602,
603, 605, 608, 609, 610,
612
Marshall, W. E., 601
Martensson, E., 348
Martin, C. S., 71
Martin, D. B., 449,
762
Martin, E. M., 528
Martin, G., 347
Martin, G. M., 715
Martin, I., 392
Martin, M. A., 132, 138,
141, 713, 716
Martin, M. M., 327,
333
Martin, S. J., 188, 189
Martin, S. S., 279
Martin, T. E., 967
Martin, W. R., 821, 822,
823, 826, 827, 830, 831,
832, 833, 835
Martinez-Canion, M., 110
Martini, L., 499, 512, 515,
778
Martonosi, A., 378, 592
Marushige, K., 151, 155,
167, 173, 176
Maruyama, H., 407, 408,
764
Marver, H. S., 813, 938,
939, 946, 961
Marvin, D. A., 529, 530
Marzotto, A., 121
Masasume, Y., 311
Maslak, S. J., 593
Mason, H. S., 682, 683,
686, 688
Masoro, E. J., 378
Mass, M., 705, 707
Massa, J., 686, 687
Massaro, E. J., 662
Massey, V., 869, 870, 871,
872, 873, 874, 875, 877,
878, 879, 881, 882, 883
Masters, B. S. S., 868
Masters, C. J., 339, 661
Masubachi, M., 603
Matalon, R., 627
Mathews, C. K., 302, 305,
306, 308
Mathews, F. S., 52, 53,
979
Mathews, J., 442, 445
Mathews, M. B., 612, 614
Mathewson, J. H., 690
Mathias, A. P., 93, 107
Mathieu, Y., 415
Matomiya, M., 337
Matschinasky, F. M., 657
Matsubara, H., 878
Matsubara, S., 953, 963
Matsubara, T., 344, 348
Matsuda, T., 937
Matsuhashi, M., 759, 762,
938, 959
Matsuhashi, S., 762
Matsui, Y., 834
Matsumura, S., 453
Matsumura, Y., 675
Matsushima, A., 113
Matsushima, Y., 601, 602,
603, 605, 612
Matsuhiro, A., 431, 436
Matsuura, F., 344
Matsuya, Y., 711, 712
Mattern, C. F. T., 255
Matthews, B. W., 64, 65,
68, 69, 83, 84, 85, 87,
88, 115, 117, 119

AUTHOR INDEX

- 898, 899
 Matthews, H. R., 232, 239, 529
 Matthysse, S., 777-820
 Matthysse, S. W., 487
 Mattock, P., 94, 458, 459
 Maurer, H. R., 965
 Maurer, P. H., 904
 Maury, P., 349
 Mavis, R. D., 875
 Mavrides, C., 946, 947
 Maxfield, M., 601
 Maxwell, L. H., 229
 May, D. G., 822
 May, M. E., 721
 Mayahara, H., 267
 Mayama, A., 337
 Mayberry, W. E., 481
 Mayberry, W. R., 347
 Mayer, G. L., 351
 Mayer, S. E., 648, 649, 652
 Mayfield, E. D., 938
 Mayhew, S. G., 870, 871
 Maynert, E. W., 832, 833, 834
 Mayo, J. W., 657
 Mazé, R., 552
 Mazia, D., 155, 172, 173
 Mazur, R. H., 850
 Mazzarella, L., 56, 57, 106, 979, 981, 990, 1011, 1012, 1030, 1031
 McAlister, E. D., 413
 McAllister, J. K., 872, 873
 McAllister, R. M., 724, 725, 730
 McAnelly, S. J., 649
 McAustian, B. R., 722, 944, 956
 McBride, R. A., 918
 McCallum, M., 178
 McCaman, R. E., 362
 McCann, S. M., 499, 503, 504, 511, 512, 514, 515, 516, 517, 518, 519, 520, 521, 522
 McCarthy, B. J., 131-50; 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 174, 195, 196, 200, 717, 931, 966
 McCarthy, L. E., 822
 McCarty, K. S., 942
 McCarty, R. E., 392, 393, 395, 397, 400, 402, 403
 McCay, P. B., 366
 McClane, T. K., 823
 McClintock, B., 216
 McClintock, D. K., 58
 McCloskey, J. A., 506, 507, 508
 McCluer, R. H., 349
 McCluskey, R. T., 908
 McCombs, R. M., 740, 744
 McConaughy, B. L., 134, 135, 136, 137, 138, 139, 141, 142, 145, 146, 931, 966
 McConkey, E. H., 185, 199, 201, 204, 213, 214, 215
 McConn, J., 84
 McConnell, D. G., 282
 McConnell, D. J., 173
 McConnell, H. M., 55, 102, 982, 992, 1031, 1036
 McCord, J. M., 870
 McCormick, D. B., 771, 772, 869, 874, 879
 McCoubrey, A., 824
 McCoy, S., 992, 1028
 McCray, J., 401
 McCrea, B. E., 27
 McCullagh, P. J., 913
 McDonald, C. C., 112
 McElhaney, R. N., 328
 McElligott, J. G., 805
 McFadden, B. A., 26, 36, 59
 McFall, E., 951
 McFarland, V. W., 740
 McFarland, W., 915
 McFarlane, A. S., 942
 McFarlane, E. S., 730
 McGandy, E. L., 52, 53, 979
 McGivan, J. D., 395
 McGregor, D. D., 910
 McGuckin, W. F., 478
 McGuire, E. J., 458, 621, 626
 McGuire, M., 906
 McIlreavy, D. J., 190, 198, 217, 244
 McIntire, K. R., 891, 897
 McIntosh, D. J., 366
 McIntosh, R., 986
 McKay, L. L., 581
 McKay, R., 268
 McKelvy, J. F., 602
 McKibbin, J. M., 348
 McLachlan, A., 979, 1030
 McLain, H. H., 296
 McLaren, A., 141
 McLaughlin, C. L., 898, 899
 McLean, F. C., 5, 17
 McLean, J. D., 406
 McLean, J. R., 253
 McLean, P., 656
 McLennan, H., 797
 McLeod, M. E., 372
 McManus, I. R., 873, 874
 McManus, T. T., 103
 McMaster, Kaye, R., 200
 McMurray, C. H., 662
 McMurray, W. C., 371
 McNeill, J. H., 649
 McPherson, A., Jr., 64
 McPhie, P., 194, 232, 239
 McWhorter, W. P., 379
 Mead, J. F., 384, 379
 Meadows, D. H., 92, 93, 94, 111, 112
 Means, G. E., 116
 Means, R. E., 326
 Medrano, L., 661
 Medzihradsky, F., 591
 Meech, R. W., 788
 Meezan, E., 601, 630, 722
 Mehler, A. H., 419, 957
 Mehta, S. L., 188
 Meienhofer, J., 69, 109
 Meier, H., 703, 737, 746
 Meighen, E. A., 28
 Meizler, M. H., 172
 Meissner, W. W., 784
 Meister, A., 104, 105, 114, 764, 768, 875, 877, 878
 Meites, J., 499, 506, 512, 515, 519, 521
 Mel, H., 152, 153, 157
 Melamed, M. D., 601, 771
 Melchers, F., 610, 892
 Melechen, N. E., 303
 Mellett, L. B., 826
 Melli, M., 145
 Melnechuk, T., 778
 Melnick, J. L., 710, 711, 717, 724, 727, 944
 Melo, L., 582
 Meloun, B., 119
 Melzack, R., 805
 Mendelsohn, J., 152, 153, 154, 155, 157
 Menderhausen, P. B., 344
 Menken, L. L., 489
 Mercer, E. H., 623
 Mercer, F. V., 406
 Merker, H. J., 264, 960
 Merlevede, W., 643
 Merlino, N. S., 650
 Mermall, H. L., 64
 Meronk, F., Jr., 165
 Merriam, V., 144
 Merrifield, R. B., 841-66; 69, 842, 848, 849, 853, 854, 855, 861
 Merrill, S. H., 195, 229, 244
 Merritt, C. R., 591
 Merskey, H., 628
 Mermann, H. J., 652
 Meselson, M., 314
 Mess, B., 782
 Messenguy, F., 969
 Messer, J. V., 662
 Messer, M., 664
 Metcalfe, J., 986
 Metcalfe, R. F., 368
 Metzger, B., 27
 Metzger, H., 889-928; 801, 890, 891, 894, 897, 898, 901, 909
 Metzger, K., 307

- Metzker-Coutinho, R. A., 835
 Metzner, H., 389
 Meyer, K., 601, 608, 614, 615
 Meyer, R. R., 257
 Meyer, T., 688, 690
 Meyer, V., 519, 520
 Meyer, W. L., 447, 448, 642, 643
 Meyerhoff, O., 592
 Meyers, G. E., 482
 Michaelis, L., 489
 Michaud, G., 677
 Michel, M. R., 706, 709
 Michelson, A. M., 133
 Michie, D., 918
 Middlebrook, W. R., 102, 103
 Midgley, J. E. M., 188, 190, 196, 198, 217, 244
 Miedema, E., 944
 Migeon, B. R., 813
 Migliano, V., 168
 Mihaesco, C., 891
 Mihaesco, E., 891
 Miki, K., 677
 Mildvan, A. S., 475, 476, 661, 762, 764, 765, 766, 773
 Miledi, R., 790
 Miles, C. D., 393
 Miles, D. W., 868
 Miles, E. W., 431, 432
 Miles, J. E., 986
 Miles, J. N., 986
 Millitzer, W. E., 336
 Milkowski, J. D., 856
 Millar, D. B., 41, 244
 Miller, A. L., 759
 Miller, D., 565
 Miller, D. L., 461, 462
 Miller, D. S., 942
 Miller, E. J., 612
 Miller, F., 267, 268, 601, 891, 897
 Miller, J. F. A. P., 916, 917
 Miller, J. H., 165, 430
 Miller, J. W., 824
 Miller, L. L., 951
 Miller, N. E., 783
 Miller, O. L., 201, 207, 214, 215, 216
 Miller, R. S., 764
 Millet, J., 677
 Millette, C. F., 906, 907
 Millman, B. M., 67
 Mills, D. R., 233, 243, 245, 543, 544, 545, 546, 547, 548
 Millward, S., 229
 Milne, E. A., 640
 Milne, G. W. A., 331, 813
 Milner, L. S., 565, 573, 574
 Milstein, C., 646, 892, 893, 896
 Milstein, C. P., 646
 Mindlin, A. J., 578, 580
 Min Jou, W., 235, 238, 239, 245, 529, 532
 Minich, V., 988
 Minocha, H. C., 709
 Minowada, J., 733
 Minson, A. C., 464, 465
 Minton, N. J., 402
 Miranda, H., 831
 Mirsky, A. E., 143, 145, 162, 164, 167, 168, 171, 172, 173, 215
 Mirzabekov, A. D., 237, 244
 Misaki, A., 350
 Mishima, S., 431, 436
 Mistry, S. P., 757
 Mitchell, A., 646
 Mitchell, C. D., 116
 Mitchell, C. L., 835
 Mitchell, G. F., 916, 917
 Mitchell, H. K., 962
 Mitchell, J. F., 791
 Mitchell, P., 59, 389, 390, 392, 395, 396, 402
 Mitchison, N. A., 902, 903, 905, 911, 912, 914, 917, 919, 920
 Mitmaker, B., 622
 Mitra, S., 529, 530
 Mitsui, H., 196
 Mitsuayasu, M., 857
 Mittelman, A., 721, 730
 Mittler, J. C., 515, 516
 Mittwoch, V., 167
 Mitz, M. A., 77, 82
 Mitzuno, M., 842
 Miura, K., 199
 Miya, T. S., 829
 Miyagi, N., 145
 Miyaji, T., 984, 988
 Miyake, T., 528, 529
 Miyake, Y., 879, 880
 Miyamoto, E., 642
 Miyazaki, M., 237, 244
 Mize, C. E., 331, 813
 Mizel, M., 735, 736
 Mizoguchi, T., 855
 Mizukami, H., 994
 Mizuno, N., 591
 Mizushima, H., 675
 Mizutani, A., 267
 Mizutani, T., 244
 Mocabach, H., 534, 535
 Mock, N. L., 900, 1000
 Moellering, H., 654
 Mohme-Lundholm, E., 648
 Moiser, D. E., 911, 915
 Mold, J. D., 326
 Moldave, K., 460
 Mueller, W., 192
 Molnar, F., 592
 Molnar, G. D., 478
 Molnar, J., 174, 618, 619, 622
 Molotkovsky, J. G., 369
 Moncel, C., 677
 Monier, R., 199, 209
 Monn, E., 988
 Monny, C., 133
 Monod, J., 26, 483, 484, 487, 570, 575, 578, 825, 930, 931, 944, 1035
 Monroe, R., 460
 Monroe, R. E., 338, 346
 Montagnier, L., 188, 193, 528, 707, 740
 Montgomery, R., 601, 602, 604, 605, 610, 612
 Montrozier, H., 329
 Monty, K. J., 583
 Montzka, T. A., 822
 Mookerjea, S., 368
 Moon, H. M., 461, 462
 Moor, H., 790, 809
 Moore, C., 254, 255
 Moore, C. L., 655
 Moore, D. E., 152, 153, 154, 155, 157, 160
 Moore, D. H., 739
 Moore, E. C., 296, 871, 872, 873
 Moore, G. M., 339
 Moore, J., 835
 Moore, J. H., 333
 Moore, K. E., 822
 Moore, O., 950, 954
 Moore, P. B., 200
 Moore, R. D., 911, 915
 Moore, R. E., 411
 Moore, R. L., 141, 143
 Moore, R. O., 662
 Moore, R. R., 984
 Moore, R. Y., 832
 Moore, S., 92, 107, 109, 110, 111, 112, 434, 601, 602, 603, 605, 611, 612, 853, 860
 Moorehead, J. K., 915
 Moorehouse, R., 347
 Moos, C., 592
 Mora, P. T., 740
 Morales, M. F., 486
 Moran, J. F., 882
 Moravek, L., 899
 Mordoh, J., 654
 Morell, D. B., 883
 Morell, J. L., 117
 Morell, P., 140, 211, 213, 214
 Moret, V., 268
 Morey, A. V., 268
 Morgan, H. E., 641
 Morgan, T. E., 367
 Morgan, W. T. J., 601, 614
 Mori, R., 660
 Mori, T., 679, 689
 Moribayashi, N., 835
 Morihara, K., 74, 119
 Morikawa, N., 431, 436
 Morimoto, H., 992
 Morimura, H., 660, 861, 936, 950
 Morinari, R., 876
 Morino, Y., 26, 27, 57, 58

AUTHOR INDEX

- Morita, S., 689, 690
 Morowitz, H. J., 487
 Morpurgo, G., 278, 282
 Morris, A., 802
 Morris, D. R., 601
 Morris, H. P., 334, 342,
 656
 Morris, I., 403, 405, 415
 Morris, L. J., 330, 337
 Morris, S. J., 92
 Morrison, J. F., 482
 Morrison, J. M., 707
 Morrison, M., 675, 683,
 685
 Morrison, W. J., 662
 Morrison, W. R., 344
 Morrow, A. G., 963
 Morse, D. E., 658, 967
 Morse, H. G., 567
 Morse, J. K., 16
 Morse, M. L., 562, 563,
 564, 565, 567, 568, 580,
 581, 654
 Morse, P. A., Jr., 945,
 956
 Morton, R. A., 327, 328
 Morton, R. K., 679
 Moscatelli, E. A., 343
 Moscona, A. A., 630, 791,
 941, 956
 Moscona, M. H., 941, 956
 Moses, M. J., 163
 Moses, R. E., 532, 550,
 551
 Moses, V., 411
 Mosier, D. E., 915
 Mosig, G., 301, 706
 Mosko, M. M., 910
 Mosley, J., 806
 Moss, C. W., 329
 Moss, D. N., 406, 407
 Moss, T. H., 692
 Mossé, H., 938
 Mosteller, R., 967
 Motokawa, Y., 674, 676,
 1016
 Motulsky, A. G., 166, 940,
 952, 963, 986
 Mounoulou, J. C., 255, 257,
 275
 Mourad, N., 294
 Moustacchi, E., 253, 256
 Moyer, F. H., 662
 Moyse, A., 418
 Mozes, E., 904
 Mudd, J. B., 103, 362,
 367
 Mueller, D. M., 477
 Mueller, G. C., 367
 Mueller, K., 198
 Mueller, R. A., 794
 Mühlrad, A., 112, 119
 Muir, L., 606, 608, 615
 Muirhead, H., 36, 52, 53,
 56, 57, 58, 65, 69, 70,
 77, 78, 79, 80, 82, 83,
 106, 117, 979, 980, 981,
 990, 1011, 1012, 1030,
 1031, 1034
 Mukerjee, H., 601, 629
 Mukherjee, B. B., 442,
 443, 444, 445
 Mukoyama, K., 382
 Muldoon, T. G., 601, 628
 Mülé, S. J., 826, 827
 Mulhaupt, E., 664
 Mulhausen, H. A., 662
 Müller, B., 919
 Müller, C. J., 984, 1014
 Müller, E. E., 514, 515,
 516, 519, 520, 521, 822
 Müller-Eberhard, H. J.,
 897, 902, 912
 Müller-Eberhard, U., 686,
 687
 Muller-Hill, B., 165
 Mumaw, V. R., 915
 Munder, P. G., 381
 Munkres, K. D., 277
 Munoz, C., 835
 Munoz, E., 280
 Munro, A. J., 193
 Munro, H. N., 939, 965,
 967
 Munro, J. L., 302
 Munske, K., 650
 Munson, P. L., 847
 Muraca, R. F., 327
 Murachi, T., 123, 601
 Murad, F., 650
 Murakami, M., 244
 Murakami, W. T., 630, 705,
 707, 722
 Muramatsu, M., 201, 202,
 203, 207
 Muramatsu, T., 443, 602,
 626
 Muraoka, M., 860
 Murayama, M., 55
 Murdock, A. L., 122
 Murran, A. W., 280
 Murray, C. D., 5, 15
 Murray, E. G., 329, 336,
 347
 Murray, H. A., 14
 Murray, J. F., Jr., 104
 Murray, K., 153, 167,
 170, 173
 Murray, K. N., 442, 443,
 445
 Murray, R., 725
 Murray, R. G. E., 312
 Muto, A., 200
 Mutolo, V., 217
 Mutt, V., 850, 851
 Myca, Z., 829
 Myers, J., 689, 690
 Myhill, J., 481
 Myrhe, D. V., 347
- N
- Nabholz, M., 166
 Nachbaur, J., 268, 381
 Nachmansohn, D., 59
 Nadenicek, J. D., 331
 Nadler, N. J., 622
 Nagai, Y., 674
 Nagami, K., 119
 Nagano, K., 591
 Nagata, T., 162, 253,
 265
 Nagatsu, T., 881
 Nagel, R. L., 986, 998,
 1012, 1016, 1017, 1023,
 1036
 Nageo, M., 271
 Nagley, P., 367
 Nahmias, A. J., 737
 Naib, Z. M., 737
 Najjar, V. A., 646, 647,
 848, 855
 Nakada, D., 199, 200,
 537, 538, 540, 541,
 549
 Nakai, G. S., 644
 Nakai, M., 678
 Nakai, N., 108
 Nakajima, K., 721, 730
 Nakajima, S., 330
 Nakamura, H., 294
 Nakane, P. K., 586
 Nakano, E., 662
 Nakano, M., 876, 877
 Nakano, Mo., 348
 Nakao, E., 374
 Nakata, Y., 741
 Nakaw, M., 591
 Nakaw, T., 591
 Nakaya, K., 116, 117
 Nakayama, N., 403
 Nallar, R., 512, 515
 Namm, D. H., 649
 Nance, W. E., 661
 Naol, M., 875, 878, 879,
 881, 882
 Naono, S., 140
 Naor, D., 905
 Narahara, H. T., 663, 664
 Narayanan, V. L., 850,
 851
 Narise, S., 430
 Nase, S., 918, 920
 Nason, A., 458, 1016
 Nass, M. M. K., 253,
 255, 263, 282, 810
 Nass, S., 253, 257
 Nasser, D. S., 441
 Natale, P. J., 662
 Nathans, D., 531, 532,
 533, 536, 537, 538, 539,
 540, 541, 549, 550, 551
 Naughton, M. A., 88, 986
 Nava, G., 551
 Nawa, T., 253
 Naworal, J., 330, 332, 343
 Nayak, D. P., 744, 746
 Naylor, R., 133, 134, 240
 Nazerian, K., 736
 Nduaguba, J. D., 625
 Neal, M. J., 834

- Nebert, D. W., 945, 946,
961, 965
Neer, E. J., 122, 1016
Neet, K. E., 27, 59, 71
Neff, N. H., 832
Negelein, E., 677
Negishi, T., 344, 348
Neher, R., 847
Neidhardt, F. C., 165, 199,
942
Neill, A. R., 339
Neill, J. M., 4, 5
Neims, A. H., 867-88;
869, 876, 879, 880, 881,
882
Nelson, C. A., 883, 897
Nelson, C. D., 406, 416,
417
Nelson, D. J., 294
Nelson, D. S., 912
Nelson, E. B., 419, 420
Nelson, G. J., 339
Nelson, T. E., 647
Nemer, M., 145, 202
Nemeth, A. M., 948
Nemethy, G., 26, 487,
1035
Nervi, A. M., 758, 759,
760
Nesbitt, J. A., III, 369
Nester, E. W., 441
Neu, H. C., 582, 587
Neubauer, Z., 550, 551
Neuberger, A., 116, 373,
601, 602, 603, 605, 608,
609, 610, 612
Neubert, D., 256, 257,
264
Neufeld, E. F., 458, 622,
624, 625, 627, 640
Neufeld, G. J., 35
Neuhard, J., 296, 298,
299, 312
Neuhaus, F. C., 375
Neumann, H., 109
Neumann, J., 389, 390,
391, 392, 393, 400
Neumann, N. P., 601
Neunke, B. J., 102
Neupert, W., 267, 268,
276, 279
Neurath, H., 71, 77, 78,
82, 83, 114, 119
Neutra, M., 629
Newell, G. F., 133
Newman, A., 162
Newman, H. A. I., 324
Newman, J., 311
Newton, C., 489
Newton, N., 675, 677
Ng, M. H., 280
Ng, M. L., 829
Niall, H. D., 847, 848,
892
Nicholais, G. E., 586
Nichol, C. A., 944, 957
Nichol, L. W., 41
- Nicholas, D. J. D., 674
Nichols, B. L., 517
Nichols, B. W., 347
Nichols, J. L., 188, 191,
531, 532
Nicholson, F., 416, 420
Nicolaides, N., 331, 332,
333
Nicol, C. S., 499, 521
Nicolson, M. O., 724, 725,
730
Niehaus, W. G., Jr., 366
Niemeyer, H., 936
Nieminen, E., 351
Nierlich, D. P., 165
Nieuwenhuizen, W., 380
Nikitovitch-Winer, M. B.,
512
Nikkari, T., 333
Nikolicjevic, O., 822, 829
Nilsson, A., 119
Ning, J., 656
Nishida, K., 411
Nishigori, H., 372
Nishihara, T., 528, 544
Nishikawa, K., 680, 685
Nishikimi, M., 881, 882
Nishimura, E. T., 953
Nishimura, K., 348
Nishimura, M., 398, 399,
401, 402
Nishimura, S., 237, 239,
244
Nishimura, T., 431, 436
Nishizaki, Y., 392
Nishizuka, Y., 460, 461
Nisonoff, A., 109, 899,
900
Niu, C., 69
Niyogi, S. F., 133, 134,
135, 139
Noat, G., 477
Nobbs, C. L., 1028
Nobel, P. S., 394
Noble, R. W., 997, 1006,
1014, 1015, 1019, 1020,
1021, 1022, 1023
Nobs, M. A., 416, 420
Nobumasa, I., 239
Nocito, V., 876
Noda, H., 783
Noda, K., 880
Noelkin, M. E., 897
Noell, W. K., 963
Nojima, S., 380
Nolan, C., 609, 610,
618
Noll, H., 184, 185, 186,
258, 260, 261, 274
Noller, H., 200
Noller, H. F., 659
Nolténius, H., 913
Noltmann, E. A., 110
Nomoto, M., 113
Nomura, J., 27
Nomura, M., 199
Nomoyama, M., 529, 530,
541, 550, 552
Nooner, D. W., 326
Nordlie, R. C., 655, 936
Norman, A., 159
Norman, A. W., 965
Noronha, F., 737
Norrestam, R., 868
Norris, E., 116
North, A. C. T., 36, 64,
65, 87, 89, 70, 74, 75,
76, 94, 111
North, J. C., 682, 683,
686, 688
Northcote, D. H., 601, 609,
613, 618
Northrop, D. B., 758, 759
761, 766, 767
Norrun, K. R., 267, 268
Nossal, G. J. V., 917
Nossal, N. G., 315, 566,
582
Notani, G., 532, 533,
537, 538
Novella, M.-A., 512
Novelli, G. D., 263
Novogrodsky, A., 873
Novotny, C., 534
Novy, M. J., 986
Nowoswiat, E. F., 111
Nowotny, A., 350
Nozaki, Y., 997, 1028
Nozu, K., 536, 544
Nozu, Y., 528
Nuenke, R. H., 610
Numa, S., 759, 760,
762, 763, 938, 959
Nussbaum, A. L., 313
Nussenzweig, V., 904,
905, 912, 913
Nutt, R. F., 69, 856
Nuttall, F. Q., 645, 646,
652, 653
Nwagwa, M., 965
Nybäck, H., 835
Nye, P. W., 781, 782, 783,
786
Nygaard, A. P., 140
Nyhan, W. L., 813
Nyswander, M. E., 829
- O
- Obata, K., 791
Oberdisse, E., 256, 257
Obermeier, R., 861
O'Brien, J. S., 339, 340,
349, 627, 813
O'Brien, P. J., 102, 624
O'Brien, T. W., 262
Ochoa, S., 528, 532, 533,
536, 537, 538, 540, 541,
543, 544, 546, 757, 758,
760, 762, 764, 769
Ochsner, R. T., 488
O'Connell, E. J., 659
O'Connor, J. D., 343
O'Connor, T. E., 737, 741

AUTHOR INDEX

- Oda, H., 881
 Oda, K., 239, 713, 714, 716
 Oddeide, R., 657
 Odell, C., 84
 Odinstova, M. S., 186
 O'Donnell, J. J., 896
 O'Donnell, J. V., 952
 Oeschger, M. P., 294, 531, 532, 533, 536, 537, 538, 540, 541, 550
 Oeser, A., 419
 Oesterhelt, D., 453, 454, 455, 456
 Ofengand, J., 230
 Ogawa, K., 267
 Ogawa, S., 55, 56, 982, 990, 991, 992, 1031, 1036
 Ogino, T., 727, 730
 Ohad, I., 948
 Ohba, Y., 161
 One, K., 729
 Onigushi, T., 625
 Ohishi, N., 878, 881, 882
 Ohlenbusch, H. D., 613
 Ohlenbusch, H. H., 167
 Ohms, J. L., 602
 Ohno, M., 855, 857
 Ohno, T., 528, 529
 Ohta, N., 722
 Ohtaka, Y., 536, 537, 538, 544
 Ohtsuki, M., 35, 39
 Oishi, G., 214, 219
 Oishi, M., 140, 211, 213, 214
 Ojemann, R. G., 784
 Okai, S., 337
 Okai, T., 74, 677, 950, 965
 Okada, S., 627, 813
 Okada, Y., 528
 Okni, H., 860
 Okamoto, H., 268
 Okamoto, M., 844
 Okamoto, T., 229, 230, 233, 245
 Okamura, K., 878, 879, 881, 882
 Okawa, H., 601, 630
 Okazaki, R., 311
 Okerman, P. A., 627
 Okuda, S., 601
 Okuda, T., 69, 849
 Okunuki, K., 115, 673, 675, 677, 678, 688, 689
 Okuyama, H., 373, 380
 Okuyama, T., 603, 612
 Okuyan, M., 740
 Olah, G. A., 771
 Olbrich, B., 277, 279
 Old, L. J., 736, 741
 Old, L. O., 445
 Oleson, A. E., 314
 Olins, D. E., 171, 895
 Oliver, I. T., 948, 956
 Oliver, R. J., 641
 Oliver, R. M., 442, 443, 444, 445, 446
 Olivera, B., 167
 Olmsted, M. R., 759, 762
 Olson, J. M., 389, 399, 690
 Olson, J. R., 784
 Olson, M. W., 480
 O'Malley, B. W., 941
 Omenn, G. S., 856
 Omura, T., 277, 686, 687, 938, 940, 948, 960, 961
 Onaka, M., 727
 Ondetti, M. A., 842, 850, 851, 852, 860
 Onugun, A., 414, 417
 Ono, Y., 380, 461, 462
 Onites, D. A., 854, 855, 858
 Onomura, O., 783
 Ooyama, W., 783
 Opara-Kubinska, Z., 707
 Op den Kamp, J. A. F., 336, 346, 370, 373
 Oppenheim, J. J., 906, 909
 Oppenheimer, H. L., 84
 Orchard, B., 416
 Orchin, M., 34
 Orcutt, B., 591
 Ord, M. G., 170, 172, 173
 Ordal, E. J., 140, 141
 Orlando, J. A., 680, 682, 689
 Orme-Johnson, N., 266, 267, 268
 Orme-Johnson, W. H., 686, 687
 Oro, J., 325, 326, 327
 Orr, M. J. V. B., 293
 Orr, M. R., 871, 873
 Orrell, S. A., Jr., 654
 Orrenius, S., 938
 Osawa, S., 185, 196, 197, 198, 200, 211, 528
 Osborn, M. J., 328, 374, 376
 Osgood, R. R., 986
 Oshima, T., 844
 Oso, K., 861
 Osman, O. H., 830
 Osmond, B., 407
 Osmond, H., 814
 Osterland, C. K., 891
 Ostrovskii, D., 673, 688
 Osuga, D. T., 104, 116
 Ota, A., 678
 Otake, E., 196, 197, 199, 200, 211
 Otis, A. B., 482
 Otsuji, N., 590
 Otsuka, H., 350
 Otsuka, J., 692
 Otsuka, K. I., 873, 874
 Otsuka, M., 790
 Ottenheym, H. C. J., 411
 Otto, K., 656
 Ottolenghi, A., 573
 Oumi, T., 199
 Ovchinnikov, Yu. A., 395
 Overath, P., 449
 Overby, L. R., 528, 529, 530, 533, 549, 550, 551
 Owen, B. B., 51
 Owens, O. V. H., 416, 417, 418, 419
 Oxender, D. L., 585, 586, 589
 Oxman, M. H., 709, 717
 Ozawa, E., 643
 Ozawa, T., 875, 878, 879, 881, 882
- P
- Pace, N. R., 544, 545, 546, 547, 548
 Packer, L., 389, 392, 393, 394, 395, 396, 399
 Padlan, E. A., 983
 Paetkau, V., 657
 Page, M., 26
 Page, R. C., 113
 Paigen, K., 952, 962, 963
 Paik, W. K., 877
 Pal, B. C., 345, 346
 Palacian, E., 27
 Palade, G. E., 277, 622, 938, 940, 948, 960, 961
 Paleveda, W. J., Jr., 856, 857, 860
 Palmer, G., 869, 870, 871, 872, 874, 878, 883
 Palmer, J. L., 109
 Palmer, R. A., 92
 Palmeriter, R. D., 941, 965
 Paltauf, F., 279, 337
 Palmer, T., 601, 613, 615
 Pande, S. V., 379
 Pandey, R. S., 119
 Pandit, U. K., 71, 73
 Panganamala, R. V., 335
 Panny, S. R., 306
 Panos, C., 328
 Pantelouris, E. M., 918
 Papasarantopoulos, N., 260, 262
 Papavasiliou, P. S., 813
 Pappas, G. D., 809, 810
 Pappenheimer, A. M., Jr., 901
 Paranchych, W., 529, 530, 534, 535, 536, 551, 552
 Pardee, A. B., 26, 295, 315, 465, 562, 583, 584, 585, 587, 589, 590, 722
 Pardee, M. L., 148
 Pardon, J. F., 161
 Park, C. R., 650, 651, 956
 Parker, A. J., 103

- Parker, C. W., 900
 Parker, D. J., 102, 103,
 107, 659
 Parker, G. L., 677
 Parker, L., 84, 85
 Parker, R., 487
 Parkes, C. O., 847
 Parkhouse, R. M. E., 891,
 897, 911
 Parkhurst, L. J., 482, 491,
 990, 1009, 1027, 1031,
 1034
 Parks, P. C., 84
 Parks, R. E., Jr., 294
 Parks, W. P., 724
 Parlow, A. F., 511
 Parmegiani, A., 461,
 641
 Parnas, H., 174, 188,
 931, 966
 Parodi, A. J., 653,
 654
 Parrott, D. M. B., 916,
 918
 Parry, M. J., 656
 Pars, H., 835
 Parson, D. F., 268, 270,
 280
 Parsons, J. A., 254,
 256
 Parsons, J. T., 728, 729
 Parsons, S. M., 77, 111,
 117
 Parsons, W. W., 398,
 401
 Partridge, C. W. H., 165,
 439, 440
 Partridge, S. M., 601,
 616
 Pascaud, M., 270
 Pasero, L., 954
 Passeron, S., 660
 Passonneau, J. V., 647
 Pastan, I., 382, 567,
 581, 651, 807, 942,
 959
 Pasteels, J. L., 521
 Pastore, E. J., 297
 Patchornik, A., 84, 85,
 849
 Patel, V., 627
 Patel, Y. M., 969
 Paton, W. D. M., 821,
 828, 835
 Patrick, A. D., 813
 Patterson, B. W., 625
 Patterson, D. L., 133
 Patterson, J. A., 602
 Patterson, M. K., 601,
 630
 Patterson, P. H., 362
 Paul, A. V., 315
 Paul, J., 174, 175, 176,
 941, 944, 966
 Paul, R., 847
 Paul, W. E., 908, 910,
 911, 918, 920
 Pauli, R. M., 254
 Paulicka, F. R., 332
 Pauling, L., 57,
 1028
 Pavlasova, E., 579,
 580
 Pavlovec, A., 185
 Pawlowski, P. J., 163
 Payne, F. E., 739
 Payne, R. B., 898
 Payne, R. W., 601
 Payant, M., 381
 Pazur, J. H., 601,
 602
 Peacocke, A. R., 136, 137,
 194
 Pearlman-Kothencz, M.,
 373
 Pearse, A. G. E., 267
 Pearson, P., 200
 Pearson, R. L., 229
 Peck, E. J., Jr., 647
 Peck, H. D., Jr., 673,
 674, 677
 Pecoraro, R., 75
 Pedersen, K. O., 25
 Pedersen, P. L., 105
 Pedersen, T. A., 403
 Peisach, J., 55, 56,
 990, 991, 992, 1036
 Pekas, D. J., 614,
 629
 Pelikan, E. W., 828
 Pellegrino, C., 653
 Pelling, G., 200
 Belmont, J., 192,
 194
 Penberthy, W. K., 563,
 564, 565
 Pène, J. J., 144, 185,
 206
 Penefsky, H. S., 273, 282
 Peng, L., 768
 Penhoet, E., 28, 36
 Penman, M., 207, 208
 Penman, S., 174, 192,
 201, 202, 203, 204, 205,
 206, 207, 208, 216, 255,
 258, 265
 Penn, N. W., 968
 Pennington, R. J., 367
 Pennock, J. F., 327,
 328
 Penrose, W. R., 586
 Penswick, J. R., 195, 238,
 244
 Penzer, G. R., 868, 869
 Peppe, G., 835
 Pepper, D. S., 601, 630
 Peraino, C., 935, 945,
 956, 958, 965, 967
 Peraudou, L., 744
 Perdue, J. R., 266
 Pereira, H. G., 725, 726
 Perham, R. N., 113, 114,
 115, 116, 659
 Peries, J., 733, 739
 Perkel, D. H., 781, 783,
 786
 Perkins, E. H., 911, 913,
 915
 Perkins, J. P., 447, 642,
 648
 Perlman, P., 271, 898
 Perlman, R. L., 567, 581,
 897, 959
 Periroth, M. G., 813, 939,
 946, 961
 Perlucco, R. O., 377
 Pernis, B., 890,
 893
 Perrella, M., 1005
 Perrey, D. Y. E., 910
 Perry, R. P., 200, 201,
 202, 206, 207, 211
 Perutz, M. F., 36, 52, 53,
 55, 56, 57, 58, 64, 69,
 72, 95, 103, 106, 122,
 979, 980, 981, 984, 986, 988,
 989, 990, 1011, 1012,
 1030, 1031, 1034
 Pesce, A., 662
 Pescos, F. T., 822, 830
 Petek, F., 602
 Peterkorsky, B., 956,
 965
 Peterman, M. G., 185
 Petermann, M. L., 205
 Peters, R. L., 703, 737,
 746
 Peterson, E. A., 890
 Peterson, E. R., 791
 Peterson, L., 489,
 490
 Peterson, R. L., 544, 545,
 546, 547, 548
 Peterson, R. D. A., 906,
 907
 Petrack, B., 392
 Petrucciani, J. C., 643
 Pette, D., 287, 268,
 655, 658, 659
 Pettee, J. M., 855
 Pettersson, U., 725,
 726
 Pettit, F. H., 442, 445,
 446, 447, 873
 Pfleiffer, S. E., 296
 Pfell, E., 869
 Pfenniger, K., 790,
 809
 Pfleger, R. C., 338, 371
 Pfleiderer, G., 106, 107,
 108, 111, 121
 Pfleum, M. N., 893,
 894
 Phair, J. P., 909
 Phibbs, P. J., 581
 Philip, G., 641
 Philippson, P., 241
 Phillips, F. S., 296
 Phillipson, L., 726, 727
 Phillips, D. C., 64, 65,
 66, 69, 70, 74, 75, 76,

AUTHOR INDEX

- 94, 111, 117
 Phillips, J. H., 189
 Phillips, L. A., 536, 551
 Phillips, P. G., 327
 Phillips, W. D., 112
 Phillips-Quagliata, J. M., 912
 Phizackerly, P. J. R., 336, 346
 Photaki, L., 848, 849
 Piantadosi, C., 335
 Pick, F. M., 870
 PiekarSKI, L. J., 710, 712, 721, 730
 Pierce, G. B., Jr., 601, 629
 Pierce, J. G., 601, 602, 610
 Plez, K. A., 612
 Pigman, W., 608, 611, 615
 Pilhi, A., 107
 Pike, J. E., 324
 Pilker, E. G., 144
 Pilko, L., 254
 Pilkis, S. J., 656, 954
 Piña, M., 705, 707, 712, 715, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733
 Pincus, J. H., 901
 Pinder, J. C., 194, 232, 239, 529
 Pine, M. J., 931, 968
 Pink, J. R. L., 893, 896
 Pinkerton, M., 395
 Pinna, L. A., 268
 Pinnas, J. L., 916
 Pinsky, L., 945
 Pinzino, C. J., 209
 Ploda, L. A. R., 395
 Piomelli, S., 953
 Piperno, J., 585, 586, 589
 Piras, M. M., 934, 957
 Piras, R., 644, 653
 Plaster, L., 741
 Plaskiewicz, D., 77
 Pitts, P. H., 76
 Pitot, H. C., 934, 935, 940, 943, 945, 956, 957, 958, 965, 967
 Pittard, J., 441, 442
 Pittman, B., 329
 Pittman, R. C., 331
 Pitts, J. D., 712
 Pizer, L. L., 302, 362, 373
 Plagemann, L., 616
 Planta, R. J., 207
 Flapp, B. V., 601, 628
 Plattner, H., 278
 Playfair, J. H. L., 917
 Plekss, O. J., 822
 Plenvidhya, P., 396
 Pless, J., 843, 847, 849, 850, 859
 Pietre, G., 919
 Plume, G., 850
 Plummer, G., 737
 Plummer, T. H., Jr., 601, 602, 603, 605, 609, 611, 612, 626, 628
 Pluscic, J., 850
 Pocock, D. M. E., 334
 Podleski, T. R., 59, 788
 Poduslo, J. F., 349
 Poduslo, S. J. E., 349
 Pogo, A. O., 168, 171, 172
 Pogo, B. G., 171, 172
 Pogson, C. I., 660
 Pohl, S., 649, 650
 Pollon, W. N., 26, 27, 35, 57, 59
 Polak, R. L., 828
 Polasa, H., 712, 725, 733
 Polito, A. J., 343, 344
 Poljak, R. J., 69, 899
 Polk, W., 488
 Pollack, E. J., 714
 Pollack, J. D., 328
 Pollard, C. J., 188, 191, 217
 Pollard, E. C., 484
 Pollet, R., 544, 547, 548
 Pollitt, R. J., 628
 Pollock, J. J., 75
 Polmar, S. K., 532, 533, 536, 540, 541
 Polonovski, J., 380, 381
 Polya, G. M., 400
 Polyakova, M. S., 484
 Pon, N. G., 403, 411
 Ponte, J. G., Jr., 347
 Ponten, J., 743
 Pontremoli, S., 26, 27
 Pool, P. E., 662
 Poole, B., 947
 Poole, F., 529, 530
 Pope, J. H., 717, 730
 Popjak, G., 327
 Popov, E. M., 395
 Porath, J., 518, 859, 861
 Porra, R. J., 676, 686
 Portanova, R., 499, 501
 Porter, G. A., 965
 Porter, H. K., 415
 Porter, J. C., 499, 504, 511, 517, 518
 Porter, J. W., 449, 455, 456, 937
 Porter, K. R., 201, 202
 Porter, M. T., 813
 Porter, R. B., 828
 Porter, R. R., 893, 896
 Portoghesi, P. S., 821, 824, 825, 827
 Portsmouth, D., 121
 Portzehl, H., 592
 Possmayer, F., 339, 360, 364, 369
 Post, J. E., 737
 Post, R. L., 591
 Postema, N. M., 380
 Postgate, J. R., 674, 693, 695
 Posthumus, J., 868
 Potchen, E. J., 942
 Potter, V. R., 945, 956, 967, 969
 Potts, J. T., Jr., 847, 848
 Pousada, M., 345, 351, 381
 Poutala, S., 909
 Powell, S. S., 327
 Power, J., 165
 Powers, E. L., 808
 Powers, R., 999, 1000, 1001, 1026
 Prage, L., 726
 Prahl, J., 891
 Prahl, J. W., 898
 Prasad, R., 382
 Prato, V., 984
 Pratt, A. W., 243
 Pratt, E. A., 314
 Pratt, H. K., 869
 Preiss, J., 403, 640
 Prescott, D. J., 764
 Prescott, D. M., 164
 Press, E. M., 893, 894, 896
 Pressman, B. C., 391, 394, 395, 398, 401
 Pressman, D., 113, 114, 115, 116
 Pressman, M., 900
 Prestidge, L. S., 583, 584
 Preston, B. N., 184, 185, 258, 265
 Preuss, A., 198, 207
 Previero, A., 121
 Pribble, A. H., 512
 Pribnow, J. F., 911
 Price, A. R., 302, 304
 Price, B., 401, 402
 Price, I., 406
 Price, P. A., 109, 111
 Price, S., 787
 Price, T. D., 582, 587
 Price, V. E., 932, 947
 Priede, I., 602
 Prijs, B., 771
 Primack, A., 898
 Prince, A. M., 743, 744
 Pring, M., 473-98; 475, 479, 480, 482, 488, 489,

- 490, 491
 Prior, I. A. M., 331
 Priore, R. L., 917
 Pritchard, A. B., 772
 Pritchard, R., 162
 Privett, O. S., 331
 Prokhorovnik, S. J., 487
 Promé, J. C., 329
 Prottey, C., 347
 370
 Proulx, P., 380
 Provost, P., 438
 Pruitt, K. M., 943,
 959
 Pubols, M. H., 592
 Pudles, J., 659
 Pugh, E. L., 110, 336,
 452, 658
 Puig, J., 457
 Puleo, L. E., 382
 Pullar, D. M., 916
 Pullman, M. E., 282
 Puls, W., 649
 Punnett, H. H., 917,
 918
 Punnett, T., 403
 Purchase, H. G., 739
 Purdom, I., 174, 188, 205,
 215, 216
 Purich, D. L., 656
 Puro, K., 349
 Putnam, F. W., 303, 603,
 612, 893, 894
 Putney, F., 40
 Pye, K., 486
- Q**
- Quagliarotti, G., 205
 Quarles, R. H., 346, 368,
 392
 Quarton, G. C., 778
 Quastel, J. H., 71
 Quastier, H., 487
 Quinn, W., 163
 Quintarelli, G., 601,
 616
 Quirocho, F. A., 64, 65, 67,
 68, 69, 70, 72, 77, 78, 79,
 80, 81, 82, 83, 117
- R**
- Raacke, I. D., 210
 Rabin, B. R., 93,
 107
 Rabinovitch, M., 912
 Rabinovitz, M., 942
 Rabinowitch, B., 482
 Rabinowitch, E. I., 403,
 411
 Rabinowitz, J. C., 870
 Rabinowitz, J. L., 764
 Rabinowitz, M., 187, 188,
 254, 255, 256, 257, 258,
 263, 264, 265, 268, 270,
 276, 372
- Rabson, A. S., 730,
 919
 Rabusay, D., 280
 Race, C., 621,
 624
 Racker, E., 273, 282, 392,
 393, 395, 397, 400, 402,
 403
 Races, J., 77, 111,
 117
 Radda, G. K., 113, 868,
 869
 Radhakrishnamurthy, B.,
 601, 605, 612
 Radloff, J. F., 341
 Radloff, R., 255
 Rae, P. M. M., 160
 Rafelson, M. E., Jr., 601,
 602, 603, 605, 612
 Raff, E. C., 485
 Raftter, G. W., 102, 655
 Raftter, M. A., 77, 111,
 117, 849
 Ragatz, B., 997
 Ragnarsson, U., 856
 Rak, E., 985
 Raines, L. J., 329
 Raisman, G., 782, 800
 Raizen, E., 534
 Rajagopal, K. V., 883
 RajBhandary, U. L., 228,
 233, 242, 244
 Rake, A. V., 145, 201
 Rakhimbekova, L. S., 259
 Rakshit, S., 341
 Rakoff, H., 341
 Rall, T. W., 646, 649, 651,
 807
 Ralph, R. K., 209
 Ramachandramurthy, P.,
 601
 Ramachandran, G. N., 78
 Ramachandran, S., 335
 Ramaley, J. A., 783
 Ramasarma, T., 324
 Rambourg, A., 622, 629
 Ramirez, J., 399
 Ramirez, J. M., 400, 403
 Ramirez, V. D., 514
 Ramos, J. Francisco, 661
 Rampini, C., 380
 Rawmell, P. W., 324
 Randall, C. C., 327
 Randall, L. O., 821, 822,
 827
 Randerath, E., 236
 Randerath, K., 236
 Randle, C. L., 337
 Randle, P. J., 445, 640,
 950
 Rand-Meir, T., 77
 Ranney, H. M., 986, 998,
 1016, 1017, 1036
 Ranson, S. L., 406, 407,
 408, 418
 Rao, G. A., 362, 382
 Rao, G. R., 36
- Rao, K. V. J., 345
 Rao, R. H., 380
 Rapine, L., 172
 Rapoport, G., 27
 Rapoport, H., 829, 830
 Rapp, F., 717, 730, 734
 Rappaport, I., 550
 Raskas, H., 728
 Raskova, M., 550
 Rasmussen, P., 173
 Ratliff, R. L., 294
 Ratner, A., 521
 Ratner, M., 828, 829,
 830
 Ratner, S., 876
 Rattray, J. B. M., 339
 Rauch, N., 662
 Rauscher, E., 770
 Ravel, J. M., 461,
 462
 Ravilly, A., 987
 Ravon, D., 657
 Rawitch, A. B., 26,
 610
 Rawlinson, W. A., 675,
 679
 Rawls, W. E., 737
 Rawson, J. R., 184
 Ray, D. S., 254,
 Ray, P. D., 936,
 951
 Ray, W. J., Jr., 110, 121,
 647
 Reader, W., 114
 Reafearn, E. R., 676
 Reaven, G. M., 481
 Rebello, D., 332
 Reboud, J. P., 954
 Rebuck, J. W., 913
 Rechnigl, M., Jr., 813,
 932, 943, 947, 952, 959,
 962, 963
 Recondo, E., 860
 Redai, I., 336, 373
 Redding, T. W., 501, 502,
 504, 505, 506, 507, 508,
 509, 512, 513, 514, 515,
 516, 517, 518, 519, 520,
 521, 522, 822
 Redfield, B., 461, 462
 Redgate, E. S., 517, 518
 Redman, C. M., 826
 Reed, C. S., 986
 Reed, G., 724, 730
 Reed, L. J., 430, 431,
 442, 443, 444, 445, 446,
 447, 466, 873
 Reed, M., 512, 513, 514
 Reeke, G. N., Jr., 64, 65,
 69, 70, 72, 77, 78, 79,
 80, 81, 82, 83, 117
 Reel, J. R., 934, 943,
 945, 946, 955, 956, 964,
 967
 Rees, R. M., 823
 Reese, C. M., 240
 Reeser, F., 518

AUTHOR INDEX

- Reeves, R. E., 405
 Reeves, R. H., 230, 244
 Regimbal, T., 152, 153,
 157
 Regnier, F. E., 331
 Rehm, M. J., 999, 1000,
 1001, 1026
 Rehn, K., 374
 Reich, E., 253, 254, 256,
 313, 930
 Reich, J., 931, 967
 Reich, J. G., 477, 481,
 491
 Reich, P. R., 728, 734
 Reichard, P., 292, 295, 298,
 297, 298, 309, 310, 312,
 871, 872, 873
 Reichlin, M., 997, 1010, 1015,
 1017
 Reichmann, M. E., 233, 234,
 236, 245
 Reif-Lehrer, L., 941
 Reimann, E. M., 447
 Reimer, C. B., 722
 Reinhold, V. N., 601, 606
 Reinisch, I., 257
 Reinitz, K. G., 392, 393,
 395, 400, 401, 402, 403
 Reinwald, E., 399, 400, 401,
 403
 Reis, P. J., 253, 271
 Reiser, R., 362, 382
 Reisfeld, R. A., 892,
 893
 Reisner, A. H., 184
 Reiss, N., 486
 Reiss, O. K., 880
 Reit, E., 828
 Reithel, F. J., 459, 602
 Reitz, R. C., 363
 Rejewsky, K., 917, 918, 919,
 920
 Rejman, E., 214
 Rejnek, J., 892, 893
 Remberger, U., 759
 Remmer, H., 960
 Rendi, R., 259, 260
 Reneau, D. D., Jr., 485
 Renkonen, O., 340
 Renold, A. E., 13
 Rensing, U., 530, 544, 545,
 546, 547, 548, 550
 Reshef, L., 659
 Reznikoff, W. S., 165
 Ressler, N., 661
 Retel, J., 207
 Retey, J., 764, 773
 Revel, J. P., 942
 Revel, M., 931, 942,
 987
 Revzin, B., 684
 Rexroth, A. K., 276, 932,
 942, 943, 946
 Reynier, M., 211
 Reynolds, A. K., 821, 822,
 827
 Reynolds, C. A., 984
 Reynolds, J. A., 115
 Reynolds, J. H., 115
 Rhoads, D. G., 489, 490
 Rhodes, J. M., 912, 913,
 914
 Ribot, G., 512
 Ricard, J., 477
 Rich, A., 133, 140, 145,
 255
 Rich, M. A., 739
 Richards, B. M., 161
 Richards, F. F., 898
 Richards, F. M., 64, 65, 67,
 68, 69, 70, 72, 92, 93, 94,
 111, 113, 114, 115, 116,
 853, 855
 Richardson, C. C., 311,
 313
 Richardson, D. C., 65
 Richardson, J. P., 58
 Richardson, J. S., 65
 Richardson, K. E., 368
 Richelson, E., 532, 536
 Richert, D. A., 937
 Richter, D., 460, 481
 Richter, G., 409
 Richter, G. W., 945
 Richter, M., 906, 917
 Richter, W. R., 630
 Rickard, C. G., 737
 Rickenberg, H. V., 578
 Riebeck, P. A., 741
 Riedel, B., 763
 Rieder, R. F., 989
 Riehm, J. P., 108
 Riemann, J., 485
 Riepertinger, C., 455, 758,
 760, 769
 Riesen, A. H., 800
 Rifkin, M. R., 186, 188,
 258, 261
 Rifkind, J., 1007
 Rigas, D. A., 660
 Riggs, A., 106, 978, 985,
 986, 996, 1005, 1007, 1016,
 1030
 Riggs, A. D., 159, 162
 Riggs, A. F., 35
 Riggs, J. L., 733
 Riggsby, W. S., 144
 Rihova, L., 664
 Riley, F. L., 255
 Riley, G. A., 643, 651
 Riley, J. G., 608
 Riley, M., 133
 Riley, W. D., 447, 642, 643,
 648
 Ringelmann, E., 758, 759,
 760, 761, 762, 763, 764,
 771
 Riniker, B., 843, 847
 Riordan, J. F., 77, 82, 83,
 101, 103, 104, 110, 112,
 118, 119, 121, 658
 Rippel, R. H., 503, 516
 Ris, H., 139, 140, 151, 152,
 160, 161, 173
 Risebrough, R. W., 196
 Ritossa, F. M., 201, 205,
 213, 214, 215, 216
 Rittel, W., 843, 847,
 848
 Rittenberg, D., 869, 875,
 932
 Ritter, E., 453
 Riva, F., 110
 Ro, T. S., 201, 207
 Ro'ane, J. T., 650
 Robbin, E., 145
 Robbins, P. W., 374, 375,
 376, 601, 630, 722
 Roberts, E., 777-820; 778,
 790, 792, 800
 Roberts, G. C. K., 94,
 112
 Roberts, G. P., 617
 Roberts, J. W., 539, 550,
 728
 Roberts, N. R., 957
 Roberts, P. A., 806
 Roberts, R. B., 195
 Roberts, R. H., 294
 Roberts, W. K., 204
 Robertson, F. W., 145
 Robertson, H. D., 530, 533,
 537, 538, 539, 540, 541, 542,
 547, 549
 Robertson, J. C., 326
 Robertson, J. S., 480
 Robertson, N. W., 650
 Robinson, A. B., 690, 691,
 692, 693
 Robinson, D., 601, 625,
 626
 Robinson, G. B., 618, 622
 Robinson, G. W., 103, 111,
 122
 Robinson, H. C., 622
 Robinson, H. L., 740,
 741
 Robinson, J. C., 876, 878
 Robinson, J. M., 412
 Robinson, M. P., 374
 Robinson, R., 344, 345
 Robinson, W. E., 235, 531,
 532
 Robinson, W. S., 739, 740,
 741, 743
 Robison, G. A., 640, 650,
 806
 Roblin, R., 233, 245, 530,
 531
 Rocca, E., 877
 Rocchi, R., 105, 121
 Roche, T. E., 36
 Rockey, J. H., 895, 901
 Rodahl, K., 778
 Rodeck, H., 822
 Rodén, L., 603, 604, 608,
 612, 614, 616, 622, 627
 Rodger, N. W., 519
 Rodwell, M., 649, 650
 Roeder, R. G., 201
 Roelants, G. E., 912, 914

- Roepke, H., 485
 Rogentine, G. N., 906
 Rogers, D., 565, 587
 Rogers, E., 206, 207
 Rogers, K. J., 632
 Rogers, K. S., 880
 Rogers, L. A., 960
 Rogers, P. J., 184, 185,
 258, 265
 Rogg, H., 244
 Roholt, O. A., 119
 Roitt, I. M., 906, 910
 Rokutanda, H., 740, 744, 745,
 746
 Rokutanda, M., 740, 744, 745,
 746
 Roman, M., 275
 Romeo, D., 378
 Romero, E. M., 336
 Ronan, R., 847
 Ronchi, S., 659, 873
 Rongey, R. W., 737
 Rönquist, O., 868
 Ronzio, R. A., 104
 Roodyn, D. B., 271
 Roon, R. J., 767
 Root, R. W., 1005,
 1024
 Roots, D. G., 736
 Rose, A. H., 330, 338
 Rose, B., 906
 Rose, C. A., 341
 Rose, I. A., 656, 659
 Rose, J. A., 725, 728,
 734
 Rose, S. P., 564, 565
 Roseberry, H. H., 16
 Rosell-Perez, M., 643, 644,
 645, 653
 Roseman, S., 369, 378, 458,
 562, 563, 564, 565, 566,
 567, 568, 569, 571, 575,
 576, 577, 580, 581, 589,
 602, 621, 654
 Rosemeyer, E. R., 39
 Rosemeyer, M. A., 1002,
 1003
 Rosen, F., 957
 Rosen, F. S., 917, 918
 Rosen, R., 474
 Rosenberg, A. J., 657
 Rosenberg, B., 501,
 517
 Rosenberg, D. E., 823
 Rosenberg, I. N., 807
 Rosenberg, L. E., 481
 Rosenberg, L. L., 414
 Rosenberg, P., 379
 Rosenberg, S. A., 601,
 629
 Rosenberg, T., 565
 Rosenbloom, A. A., 368
 Rosenbloom, F. M., 813
 Rosenkranz, H. S., 296
 Rosenthal, A. F., 118, 345,
 381
 Rosenthal, A. S., 591
 Rosenthal, S., 535
 Roser, B., 915
 Rosevear, J. W., 478, 601,
 612
 Ross, C. A., 93
 Ross, D. L., 895
 Rosset, R., 209
 Rossi, G., 899
 Rossi-Bernardi, L., 1011,
 1014, 1016
 Rossi Fanelli, A., 37, 978,
 979, 993, 996, 997, 999,
 1000, 1002, 1003, 1004,
 1007, 1008, 1010, 1011,
 1012, 1013, 1014, 1015,
 1016, 1021, 1022, 1030,
 1031, 1033, 1034
 Rossi Fanelli, M. R., 1002
 Rossignol, B., 608, 615
 Rossini, L., 789
 Rosstatter, J. L., 892
 Rossmann, M. G., 36, 37,
 64, 69
 Rosso, R. G., 940, 943, 947,
 957
 Rostami, H., 481
 Roth, J., 651
 Roth, J. R., 165
 Roth, L. J., 965
 Roth, S. A., 809
 Rothfield, L., 373, 378
 Rothfus, J. A., 604,
 605
 Rothman, L. B., 644
 Rothman, M. C., 998
 Rothstein, A., 562
 Rotman, B., 568, 570
 Rottländer, E., 919
 Roughton, F. J. W., 482,
 1014, 1017, 1018, 1019,
 1025, 1033
 Rouse, H. C., 726, 728,
 730
 Rouser, G., 339, 340, 346
 Roussos, G. G., 314
 Rouviere, J. F., 140
 Roverey, M., 83
 Rowe, A. J., 899
 Rowe, D. S., 891, 897,
 901
 Rowe, L. W., 505, 506, 517
 Rowe, P. B., 938, 942,
 959
 Rowe, W. B., 104
 Rowe, W. P., 714, 717, 722,
 730, 734, 738, 740
 Rownd, R., 136, 138
 Roy, A. B., 119
 Royce, P., 517, 518
 Rozenburgt, E., 660, 661
 Rubin, C. S., 953
 Ruch, F., 582
 Ruddie, F. H., 945, 964
 Ridge, E., 904
 Rberman, N. B., 656
 Rudinger, J., 856, 861
 Rudner, R., 214
 Rudolph, U., 549
 Rüdiger, W., 139
 Ruhl, P., 913
 Ruiz-Amil, M., 661
 Ruiz-Herrera, J., 457
 Rumberg, B., 394, 398, 399,
 400, 401, 402, 403
 Rumen, N., 987
 Rumke, P., 601, 630
 Rumley, M. K., 579
 Rumsfeld, H. W., 518
 Ruosalhti, E., 904, 905
 Rupe, B. D., 829
 Rupley, J. A., 88, 75, 76,
 77, 82, 987, 990
 Rusch, H. P., 256, 280
 Ruschmann, G. K., 709
 Rushizky, G. W., 235, 236,
 241, 243
 Russell, D., 802
 Russell, L. B., 167
 Russell, R. L., 952, 962
 Russell, S., 676
 Russell, V., 650
 Russell, W. C., 725, 726
 Rustad, R. C., 256
 Rutberg, L., 296
 Rütterjans, H. H., 92,
 111
 Ruth, J. M., 326
 Rutishauser, U., 609, 610,
 628, 893, 894, 896, 898
 Rutledge, J. D., 488, 491
 Ruttenberg, G. J. C. M., 253,
 254, 255, 271
 Rutter, W. J., 26, 38, 201,
 658, 660
 Ryan, F. J., 213
 Ryan, L., 958, 967
 Ryder, E., 758, 759, 762,
 763, 769, 771, 773
 Ryter, A., 162, 163, 312
- S
- Sabin, A. B., 714
 Sable, H. Z., 298
 Sabo, E. F., 850, 851
 Saccone, C., 263, 264
 Sachs, H., 499, 501
 Sachs, L., 706, 709, 713,
 716
 Sacktor, B., 664
 Sadgopal, A., 152, 155, 157,
 169, 172, 714
 Sadowski, P. D., 316
 Saeki, T., 348
 Saenz, N., 941, 956
 Safford, R., 330
 Saffran, J., 517, 518
 Saffran, M., 501, 514, 517,
 518
 Safrer, L. B., 340
 Saga, M., 876
 Sagaert, L., 1001, 1002
 Sagan, L., 280
 Sagardia, F., 641, 642

AUTHOR INDEX

- Sage, H. J., 601
 Sager, R., 184, 185, 213, 253
 Saggese, U., 990, 1008, 1009
 Saha, J., 684
 Sahasrabudhe, M. R., 334
 Saier, M. H., Jr., 350
 St. George, R. C. C., 57
 Saito, K., 382
 Saito, T., 514, 515, 516, 519, 520, 521
 Saito, Y., 674
 Saigo, M., 659
 Sakabe, K., 311
 Sakagishi, P., 682, 683, 686, 688
 Sakai, H., 172
 Sakai, R., 856
 Sakakibara, S., 848, 850, 854, 856
 Sakaoka, H., 713, 716
 Sakarai, M., 402
 Sakiz, E., 502, 503, 504, 505, 506, 507, 508, 511, 512, 513, 514
 Sakmann, B., 781, 782, 783, 786, 787, 790
 Sakoda, M., 505
 Sakurada, T., 646
 Sakurai, K., 113
 Sakurai, T., 528, 529
 Sakurai, Y., 873, 874
 Slack, J. I., 380
 Salanki, J., 781, 782, 786
 Salas, J., 658
 Salas, M., 537, 538, 541, 936
 Salas, M. L., 658
 Salser, W., 140, 311
 Salsman, K., 349
 Salter, M. R. J., 280
 Saltman, P., 411
 Saltzgaber, J., 277
 Salvi, M. L., 709
 Salway, J. G., 370
 Salzman, N. P., 152, 153, 154, 155, 157
 Samaille, J., 735
 Samarina, O. P., 174
 Sambrook, J., 716
 Samec, J., 143
 Samejima, T., 987
 Sampson, L., 64
 Sampson, P., 608
 Sampugna, J., 333
 Sams, C. F., 483
 Samson, F. E., Jr., 789, 791, 797
 Samuelsson, B., 343, 366
 Samuelsson, B. E., 343, 344
 Samuelsson, K., 343, 344
 Sanadi, D. R., 254, 255, 269, 276
 Sanagawa, M., 678
 Sanchez de Jimenez, E., 380
 Sand, D. M., 333, 339
 Sandberg, H. E., 994
 Sandlin, R., 789
 Sandrin, Ed., 843, 847, 849, 850
 Sandru, D., 265
 Sands, R. H., 872
 Sandweg, R., 484
 Sanger, F., 88, 112, 122, 123, 188, 189, 190, 191, 195, 209, 210, 217, 218, 230, 231, 232, 235, 236, 237, 238, 239, 240, 241, 244, 245, 514, 531, 645
 Sanghavi, P., 254
 Sankaran, S., 738
 Sankaranarayanan, K., 201, 202
 San Pietro, A., 389, 396, 398
 Sansone, G., 988
 Santarius, K. A., 412, 414, 415, 417
 Santer, M., 217
 Santos, I., 660
 Santos, J. I., 768
 Sapag-Hagar, M., 656
 Sapico, V., 562, 563, 654, 657
 Sarcione, E. J., 618, 622
 Sarda, L., 601, 606
 Sarid, S., 849
 Sarkar, N., 136
 Sarma, D. S. R., 987
 Sarma, G. R., 344
 Sarma, P., 703, 722, 737, 738, 740, 746
 Sarma, V. R., 64, 65, 69, 70, 74, 75, 76, 111
 Sarnat, M., 729
 Sarto, G., 813
 Sasaki, M. S., 159
 Sasisekharan, V., 78
 Sasko, H., 447, 448, 651
 Sass, J., 326
 Sassan, Z. B., 705, 707
 Sasseoon, H. F., 937
 Sastry, P. S., 340, 344, 349, 591
 Satake, M., 603, 612
 Sato, G. H., 940
 Sato, H., 337
 Sato, K., 431, 436
 Sato, R., 679, 680, 686, 687, 688, 693
 Sato, T., 603
 Sauer, F., 452
 Sauer, G., 713, 716, 717
 Saunders, G. W., 275, 278
 Sauner, M. T., 270
 Sawada, H., 379
 Sawano, S., 501, 504, 505, 507, 508, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521
 Sawardeker, J. S., 602
 Sayers, G., 517, 518
 Scaife, J. G., 165
 Scaletta, L. J., 720, 964
 Scamahorn, J. O., 652
 Scandella, C. J., 329, 336, 373
 Scannone, H., 876
 Scanu, A., 114
 Scarborough, G. A., 567, 579, 580, 654
 Scarfani, J. F., 826, 830
 Scarpa, A., 372
 Schaal, S. M., 518
 Schachman, H. K., 26, 27, 28, 40, 41, 57, 58, 194, 295, 465, 466, 999, 1001, 1026
 Schachter, D., 578, 580
 Schachter, H., 618, 622
 Schaeffer, H. J., 769, 770
 Schaefer, S., 566, 570, 654
 Schafer, W., 741
 Schally, A. V., 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 822, 829
 Schanberg, S. M., 813
 Schantz, E. J., 109
 Scharf, R., 842, 846
 Scharff, M. D., 145, 705, 726
 Schatz, G., 273, 277, 278, 279, 283, 337
 Schauer, H., 608, 626
 Schumann, O., 628
 Schumann, W., 628, 832, 834, 835
 Schechter, A. N., 899
 Schechter, I., 74, 80, 82, 89, 860
 Schell, K., 717, 730
 Schellenberg, K. A., 119, 120, 880
 Schellman, J., 51
 Schenck, J. R., 630
 Schenkein, I., 570, 654, 806
 Scher, M., 328, 374, 375, 376
 Scheraga, H. A., 92, 111, 192, 193, 194
 Scherberg, N. E., 138, 145
 Scherphof, G. L., 339, 360, 364, 381
 Scherrer, K., 201, 202, 931, 936
 Scheitz, R. W., 64
 Schibanoff, J. M., 349
 Schiefer, H. G., 272, 371
 Schierman, L. W., 918

- Schiff, J. A., 253, 254
 Schildkraut, C. L., 131, 136, 138, 152, 153, 154, 155, 157, 169, 178, 313
 Schildkraut, J. J., 813
 Schiller, K. W., 661
 Schimke, R. T., 929-76; 270, 276, 277, 655, 656, 930, 931, 932, 933, 934, 935, 938, 939, 940, 942, 943, 944, 945, 947, 950, 951, 952, 955, 957, 958, 959, 960, 962, 963, 965, 967, 968
 Schirmer, M. D., 935, 936
 Schirrmacher, V., 918, 920
 Schlech, H. A., 336
 Schleich, T., 209
 Schlender, K. K., 645, 652, 653
 Schlenk, H., 332, 333, 339
 Schlesinger, D., 154
 Schlesinger, R. W., 706, 722, 726, 727, 728, 733, 734
 Schlesinger, S., 165
 Schlessinger, D., 184, 194, 196, 197, 198, 213
 Schliephake, W., 400, 401, 403
 Schliessfeld, L. H., 640
 Schlossman, S. F., 909
 Schlumberger, H. D., 705, 706, 707
 Schmid, C. W., 154, 171
 Schmid, D., 27
 Schmid, H. H. O., 334, 335, 343
 Schmid, K., 119, 601, 603, 604, 607, 612
 Schmid, R., 938
 Schmidt, R. J., 529
 Schmieder, M., 257
 Schmitt, F. O., 778, 789, 791, 797
 Schmitt, H., 261
 Schnabel, E., 69, 518
 Schnaitman, C., 266, 267, 268, 269
 Schneider, M. C., 546
 Schneider, W. C., 255
 Schneir, M., 460
 Schnoll, S. S., 898
 Schnös, M., 534
 Schoenberg, M. D., 911, 915
 Schoenewaldt, E. F., 856, 857, 860
 Schoenfeld, R., 481
 Schoenheim, R., 931
 Scholes, P., 675, 676, 677, 690
 Scholtissek, C., 528
 Schor, M. T., 280
 Schor, N., 200
 Schotz, M. C., 481
 Schou, M., 813
 Schramm, M., 448
 Schrank, B., 113, 114
 Schröder, E., 841
 Schroder, H., 400, 401, 403
 Schroeder, W. A., 978
 Schrohenloher, R. E., 897
 Schubert, D., 549
 Schuller, E., 806
 Schulman, L. H., 230, 244
 Schulman, M., 410
 Schultz, D. W., 647
 Schultz, G., 650
 Schultz, J., 200, 449, 453
 Schultz, S. R., 257
 Schulz, A. R., 489
 Schulz, G. E., 431, 432
 Schulze, I. T., 27, 656
 Schüssler, H., 844
 Schuster, C. R., 823
 Schuster, H., 136
 Schuster, T. M., 994, 1007, 1021, 1022
 Schütt, M., 228, 282
 Schutzel, H., 938
 Schwab, A. J., 272
 Schwam, H., 230, 244, 856, 857, 860
 Schwartz, E. R., 445
 Schwartz, F. M., 551, 552
 Schwartz, H. S., 296
 Schwartz, J. H., 537
 Schwartz, M., 165, 400, 401, 403, 601, 606
 Schwarz, D. R., 102, 103
 Schwarz, H. P., 369
 Schweet, R., 460, 802
 Schweiger, M., 229, 280
 Schweizer, E., 213, 256, 453, 454, 455, 456
 Schwendimann, M., 257, 264
 Schwert, G. W., 663
 Scocca, J. J., 306
 Scoffone, E., 105, 121
 Scott, D. W., 528
 Scott, E., 875
 Scott, J. B., 805
 Scott, R. B., 640
 Scott, S. J., 875
 Scouloudi, H., 983
 Scouten, W., 873, 874
 Scrutton, M. C., 35, 640, 759, 762, 763, 764, 765, 766, 773
 Seholm, J. E., 904
 Sealock, R. W., 642
 Sebald, W., 272, 277, 279
 Sebastian, J., 267, 268
 Sechaud, J., 312
 Sedgwick, B., 382
 Sedwall, G., 835
 Seed, J. C., 478
 Seeds, N. W., 460, 461, 462
 Seegmiller, J. F., 813
 Seery, V. L., 448, 641
 Seevers, M. H., 821, 822, 827, 829, 833
 Segal, H. L., 652, 655, 932, 940, 943, 946, 947, 957
 Segal, S., 481
 Segel, I. H., 641
 Seifert, L. L., 643
 Sekine, T., 107
 Sekuzu, I., 673, 675, 677, 678, 688
 Sela, M., 109, 115, 904, 920
 Seligmann, M., 917, 918
 Selinger, Z., 448
 Selkov, E. E., 486
 Sell, S., 906, 907
 Sellinger, O. Z., 625, 946
 Sells, B. H., 199
 Semenza, G., 664
 Sen, A. K., 591
 Sendroy, J., 5, 6, 15
 Senft, G., 650
 Seng, R., 380
 Seno, N., 608
 Seno, T., 239
 Sentandrea, R., 601, 609, 613, 618
 Senyavina, L. B., 395
 Sercarz, E. E., 920
 Sereni, F., 948
 Serif, G. S., 649
 Serlupi-Crescenzi, G., 278
 Seubert, W., 759
 Sevilla, C. L., 641
 Shabolenko, V. P., 567
 Shacharina, K. L., 717
 Shaefier, J., 460
 Shaefier, J. R., 1003
 Shah, E., 474, 475, 481, 488
 Shakespeare, P., 655
 Shall, S., 92, 116
 Shaltiel, S., 641, 854
 Shambaugh, G. E., III, 941, 946
 Shames, D. M., 478
 Shank, R. P., 876
 Shannon, J. S., 437
 Shannon, L. M., 601
 Shapira, E., 109, 110
 Shapiro, B., 382
 Shapiro, B. M., 37, 58
 Shapiro, D. M., 307
 Shapiro, H. S., 187
 Shapiro, J. T., 171
 Shapiro, L., 536, 540, 544, 545, 546, 547, 548

AUTHOR INDEX

- Shapiro, S., 658
 Sharpley, K., 679
 Shapot, V. S., 144
 Share, L., 499, 501
 Sharma, C., 936
 Sharma, V. K., 969
 Sharof, A. A., 395, 402
 Sharon, N., 75, 76, 77, 601,
 603, 605, 612
 Sharp, J., 690
 Sharp, J. A., 915
 Sharpless, S. K., 831
 Shatton, J. B., 656
 Shavit, N., 392, 396,
 398
 Shaw, C. R., 661
 Shaw, D. H., 350
 Shaw, E., 117
 Shaw, E. K., 660
 Shaw, J. E., 324
 Shaw, N., 346, 347
 Shearer, G. M., 917
 Shearer, R. W., 138, 144,
 145, 174, 931, 966
 Sheber, F. A., 892
 Sheehan, G., 366
 Sheehan, J. T., 850, 851,
 855, 861
 Sheinin, R., 709, 710, 711,
 712
 Shelaway, A., 370
 Shelton, E., 891, 897
 Shemlin, D., 875, 932
 Shemyakin, M. M., 395
 Shen, F., 788
 Shen, F. H., 830, 832
 Shen, G. M., 402
 Shen, L., 621, 624
 Shen, Y. K., 402
 Shepard, E. P., 488, 489
 Sheppard, D. C., 412,
 415
 Shepherd, W. M., 264, 707
 Sheppard, C. W., 491
 Sheppard, D. E., 165
 Sheppard, G., 76, 77
 Sherr, S. I., 367
 Sherrington, C. S., 781
 Shetawy, S. K., 942
 Shetlar, M. R., 601,
 618
 Shiba, T., 528, 529
 Shibata, K., 113, 116, 117,
 389
 Shibata, O., 253
 Shibata, S., 984, 988
 Shideman, F. E., 827
 Shier, T., 334
 Shiga, T., 881, 992
 Shigezane, K., 855
 Shih, T. Y., 167, 173
 Shimada, Y., 791
 Shimazu, T., 653
 Shimizu, A., 894, 1016
 Shimkin, M. B., 21
 Shimoda, T., 119
 Shimojo, H., 727, 734
 Shimonishi, Y., 848, 849,
 850, 854
 Shimono, H., 714
 Shimoyama, M., 951
 Shimura, Y., 532, 533, 536,
 537, 539, 550, 551
 Shinoda, T., 893, 894
 Shiobara, Y., 857
 Shipp, W. S., 442, 443,
 445
 Shive, K., 540, 549
 Shive, W., 461, 462
 Shively, J. M., 350
 Shlyapnikov, S. V., 119
 Shock, N. W., 7, 8
 Shoemaker, N. L., 536
 Shokeir, M. H. K., 813
 Shome, B., 602
 Shooter, E. M., 27
 Shore, V. C., 65
 Shorey, R. L., 461, 462
 Shorland, F. B., 331
 Short, E. C., Jr., 314,
 315
 Short, S. A., 337, 373
 Shotton, D. M., 64, 65, 70,
 83, 88
 Showe, M. K., 457
 Shreffler, D. C., 813
 Shugar, D., 197
 Shukuya, R., 1003
 Shulachev, V. P., 395,
 402
 Shulman, R. G., 55, 56, 990,
 991, 992, 1036
 Shuster, L., 277, 830,
 960
 Shyamala, G., 965
 Sia, C. L., 26, 27, 114
 Siakotos, A. N., 339
 Sibatani, A., 200
 Siddiqui, B., 349
 Sidebottom, E., 964
 Sidransky, H., 967
 Sieber, P., 843, 847, 848,
 855
 Siebert, G., 201
 Siegel, B. V., 200
 Siegel, M. R., 271
 Siegel, R. B., 459
 Siegelman, H. W., 389
 Siegler, R., 739
 Sieker, L. C., 64, 84
 Siekavitz, P., 277, 938, 940,
 948, 980, 981
 Siev, M., 207
 Siewert, G., 328, 377
 Sigel, H., 771
 Sigel, P., 655
 Siggel, U., 398, 399, 400,
 401
 Sigler, P. B., 69, 83, 84,
 85, 87, 88, 115, 117, 119
 Sih, C. J., 686
 Sikler, E. S., 821, 822, 827,
 835
 Silberberg, D. H., 813
 Silbert, D. F., 582
 Silbert, D. R., 165
 Silengo, L., 196, 197, 198,
 213
 Siliprandi, N., 268
 Sillero, A., 532, 536, 538,
 540, 544
 Silman, I., 788
 Silver, M., 677
 Silver, M. J., 345
 Silverman, D. A., 965
 Silverman, M. S., 911
 Silverman, P. M., 534,
 535
 Silverman, S. J., 109
 Silveres, A., 481
 Silverstein, A. M., 908,
 909
 Silverton, E. W., 64, 69, 83,
 87
 Silvestri, A. J., 489
 Simkin, J. L., 618
 Simmonds, P. G., 329
 Simmons, S., 409
 Simms, E. S., 293, 298,
 903
 Simon, E. H., 307, 308
 Simon, E. J., 826
 Simon, G., 339
 Simon, J., 346
 Simon, L., 536, 544
 Simon, P., 835
 Simon, S. R., 995, 1016,
 1031
 Simon, W., 395, 477
 Simonds, N. B., 892
 Simoni, R. D., 563, 564, 565,
 566, 567, 568, 569, 580, 581,
 654
 Simpson, M. V., 253,
 257
 Simpson, R. T., 82, 83
 Sims, P., 118
 Sinclair, J. H., 254, 255
 Sinclair, N. R. St. C., 916
 Sinclair, W. K., 296
 Sine, H. E., 114, 658
 Singer, S. J., 102, 111, 114,
 122, 123, 382, 891, 898
 Singer, T. P., 380, 873,
 877
 Singh, P. P., 350
 Singh, R. M. M., 413
 Singh, S., 694
 Singh, S. N., 661, 662
 Singhal, R. L., 656, 936,
 937, 950, 964
 Sinha, N. K., 109, 532
 Sinn, L. G., 842
 Sinnott, M. L., 76, 77
 Sinohara, H., 621, 622
 Sinsheimer, R. L., 529, 530,
 535, 536, 538, 541, 542, 543,
 550
 Sirlin, J. L., 201, 202, 213,
 214
 Sirs, J. A., 1019

- Siskind, G. W., 903, 908, 920
 Sisler, H. D., 271
 Sissakian, N. M., 186
 Six, H. R., 646
 Sizer, I. W., 876
 Sjöberg, L. B., 109
 Sjoerdsmo, A., 794
 Sjögren, H. O., 714, 717, 733
 Sjöstrand, F. S., 281
 Skalka, A., 170
 Skamene, E., 906
 Skavenski, I. H., 236
 Skavronskaya, A. G., 567
 Skilna, L., 217
 Skinner, W. N., 296, 312
 Skoglund, S., 778, 785, 786, 792
 Skou, J. C., 591
 Skoultschi, A., 461, 462
 Skov, K., 119
 Sky-Peck, H. H., 621, 622
 Slack, C. R., 404, 405, 406, 407, 409
 Slater, D. W., 184, 188, 217
 Slater, E. C., 389, 391, 389
 Slaughter, D., 835
 Slautterback, D., 281
 Sletten, K., 121, 690, 691, 692, 693, 694
 Sloan, C. L., 331
 Sloan, J. W., 832, 833
 Sloneker, J. H., 602
 Slonimaki, P. P., 253, 254, 275
 Slor, H., 544, 546, 547
 Slotboom, A. J., 342, 363, 381
 Sluyterman, L. A. AE., 68, 89, 90, 91
 Small, J. V., 169
 Small, T., 136
 Smilack, J. D., 876
 Smiley, J. D., 296, 312
 Smillie, L. B., 123, 641
 Smillie, R. M., 870, 871
 Smith, A. A., 830
 Smith, A. D., 381
 Smith, A. E., 280
 Smith, B., 407, 709
 Smith, B. P. F., 370
 Smith, C. J., 244
 Smith, D., 256
 Smith, D. B., 1010
 Smith, E., 693
 Smith, E. L., 83, 88, 89, 102, 107, 114, 123, 171, 172, 173, 176, 601, 604, 605, 609, 610, 612, 618
 Smith, E. R. B., 833
 Smith, F. A., 391, 400, 403
 Smith, I., 140, 194, 201, 202, 211, 213, 214
 Smith, J. D., 140, 185, 244
 Smith, J. H., 717
 Smith, K. D., 145
 Smith, L., 399, 675, 676, 677, 681, 683, 684, 685, 690
 Smith, M. A., 965
 Smith, M. E., 382
 Smith, M. F., 563, 564, 565, 567, 580
 Smith, M. S., 301, 303
 Smith, P. F., 328, 336, 346, 347
 Smith, R. A., 570, 654
 Smith, R. L., 848, 849
 Smith, Z. G., 621, 624
 Smithers, M. J., 856, 859
 Smithies, O., 661, 895
 Smithwick, E. L., Jr., 844
 Smits, S. E., 831
 Smoly, J. M., 266, 268
 Smyth, D. S., 606, 609, 611, 613, 615, 618
 Smythies, D. G., 853
 Smythies, J., 814
 Snader, K. M., 856
 Snedeker, E. H., 847
 Snell, E. E., 26, 27, 35, 57, 58
 Snell, F. M., 486
 Sneyd, J. G. T., 650, 651
 Snider, R. S., 781, 782, 786
 Smoke, J. E., 82
 Snyder, F., 334, 335, 341, 342, 364, 371
 Snyder, L., 459, 729
 Snyder, R. A., 813
 Snyder, S. H., 802
 Snyder, S. P., 737
 Sobel, B. E., 871
 Sober, H. A., 235, 236, 241, 243, 909, 982, 1015
 Sober, W. H., 145
 Sodd, M. A., 244
 Soderberg, U., 778, 785, 786, 792
 Soeiro, R., 144, 145, 147, 188, 189, 204, 206, 208, 931, 942, 966
 Sokawa, Y., 374
 Sokol, D. M., 662
 Sokol, F., 713, 717, 734
 Sokoloff, L., 805, 806
 Sokolovsky, M., 77, 82, 101, 118, 119
 Solomon, A., 898, 899
 Solomon, A. K., 12, 13
 Solomon, J. J., 736, 739
 Solomon, J. M., 912, 914
 Solomon, R. D., 340
 Sols, A., 267, 268, 656, 658, 660, 936
 Solomyosy, F., 236
 Somerville, R. L., 298, 302, 303, 305
 Sondey, J., 856
 Sonenschein, G. E., 254
 Song, P., 868
 Sonneborn, T. M., 809
 Sonnenberg, B. P., 167
 Sonnenschein, R. R., 805
 Soodzma, J. F., 655
 Sorger, G. J., 458
 Sorm, F., 119
 Sorrels, M. F., 362, 382
 Sottacasa, G. L., 266, 267
 Sourkes, T. L., 951
 South, D. J., 257, 264
 Southard, G. L., 855
 Southworth, J., 919
 Sowkinas, J. R., 570, 580
 Sox, H. C., Jr., 892
 Spagnuolo, C., 1002
 Spahr, P. F., 196, 205, 237, 238, 529, 532, 539
 Spande, T. F., 119, 120, 121
 Spangler, R. A., 486
 Spanner, S., 368
 Speaker, C. B., 662
 Spector, S., 794
 Speirs, J., 174, 188, 205, 215, 216
 Spence, M. W., 349
 Spencer, D., 391, 393
 Spencer, G. F., 330
 Spencer, J. F. T., 347
 Spencer, M., 192
 Spencer, W. A., 785
 Spener, F., 342
 Sperling, E., 877
 Sperling, R., 109, 110
 Spero, L., 109
 Sperry, R. W., 808, 809
 Spiegelberg, H., 891
 Spiegelman, S., 131, 135, 139, 140, 146, 148, 184, 198, 201, 213, 214, 215, 216, 217, 233, 239, 243, 245, 459, 528, 529, 530, 532, 533, 536, 537, 538, 543, 544, 545, 546, 547, 548, 550
 Spigelman, L., 69
 Spikes, J. D., 71, 72
 Spirin, A. S., 186, 187, 192, 193
 Spiro, M. J., 601, 603, 605, 618, 619, 620, 621, 622
 Spiro, R. G., 599-638; 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 612, 615, 616, 617, 618, 619, 620, 621, 622, 629
 Spoerl, P., 84, 117
 Spoerlein, M. T., 830
 Sporn, M. B., 169, 175, 217, 717
 Springer, G. R., 614
 Springer-Lederer, H., 411

AUTHOR INDEX

- Sprouse, H. M., 657, 658
 Spydevold, Ø., 655, 656
 Squires, C., 165
 Srere, P. A., 490
 Srinivasan, P. R., 716
 Sri Ram, J., 601, 629
 Srivastava, L. M., 655
 Srivastava, S. K., 936, 937,
 964
 Sroka, W., 69
 Staal, G. E. J., 869, 874,
 875
 Stachnyk, O., 340
 Stackpole, C. W., 735
 Stadtman, E. R., 429-72;
 37, 295, 569, 578, 586, 590
 Staehelin, M., 244
 Stahl, W. L., 363
 Stalmans, W., 644
 Stamatoyannopoulos, G.,
 940, 952, 963, 989
 Stambaugh, R., 661
 Stamm, N. B., 661
 Stanbury, J. B., 813
 Stancel, G. M., 27
 Stancer, H. C., 340, 349
 Stanelon, R., 653
 Stanford, R. H., 69, 88
 Strange, J. L., 276, 932, 942,
 943, 946
 Stanier, R. J., 529
 Stanley, C. A., 41
 Stanley, W. M., 184,
 188
 Stanners, C. P., 706
 Stanworth, D. R., 901
 Staples, D. H., 530, 531
 Stark, G. R., 121
 Starr, J. L., 188
 Starz, Y., 616
 Staub, A., 842
 Stavis, R. L., 527-60
 Stavitsky, A. B., 912,
 914
 Steck, T. L., 740
 Steele, W. J., 201, 207, 213,
 214
 Steelman, S. L., 519, 520
 Steen, G. O., 343, 344
 Stefanov, V. E., 487
 Stefanye, D., 109, 601
 Stein, A. M., 873
 Stein, J. H., 873
 Stein, O., 363, 367, 371,
 380
 Stein, W. D., 562, 579, 585,
 593
 Stein, W. H., 92, 107, 109,
 110, 111, 112, 117, 434,
 601, 602, 603, 605, 611,
 612, 853
 Stein, Y., 363, 367, 371,
 380
 Steinberg, A. G., 892
 Steinberg, C. M., 301
 Steinberg, D., 331, 481,
 813
 Steinberg, I. Z., 40, 109,
 110
 Steiner, D. F., 69, 644
 Steiner, L. A., 893, 895,
 896, 899, 903
 Steiner, M. R., 368,
 370
 Steiner, R., 133, 482
 Steiner, S., 337, 347
 Steinert, G., 253
 Steinert, M., 253
 Steinhaus, L. K., 395
 Steinmetz, M. A., 661
 Steinrauf, L. K., 760,
 770
 Steinschneider, A., 258
 Steitz, J. A., 232, 240, 245,
 530, 531, 533, 539, 541,
 549
 Steitz, J. E., 550, 728
 Steitz, T. A., 63-100; 65,
 68, 69, 70, 77, 79, 80, 82,
 83, 85, 86, 87, 88, 117,
 467
 Stellwagen, R. H., 151, 155,
 169, 173, 875, 966
 Stenchever, M. A., 964
 Stensland, B., 888
 Stent, G. S., 165, 200,
 966
 Stenwick, M. W., 826
 Stenzel, P., 660
 Stepielski, Z., 715, 720
 Sterling, W. R., 932,
 947
 Stern, A., 166
 Stern, B., 351
 Stern, B. K., 403
 Stern, J. R., 767, 773
 Stern, M. P., 481
 Stern, R., 230
 Sternberg, S. S., 296
 Stetler, D. A., 406
 Stetten, M. R., 655
 Stevely, W. S., 171, 173
 Stevenin, J., 143
 Stevens, B. J., 254, 255
 Stevens, R. K., 326
 Stevenson, J., 327,
 328
 Stevenson, K. J., 123
 Stewart, B. W., 393, 402
 Stewart, D. R., 395
 Stewart, F. H. C., 854
 Stewart, G. A., 942
 Stewart, J. M., 854
 Stewart, P. J., 371
 Sticht, G., 372
 Stiehl, H. H., 399
 Still, J. L., 877
 Stiller, M., 403, 419
 Stillwell, R. N., 505, 507,
 508
 Stirling, J. L., 601, 625
 Stirpe, F., 660, 661
 Stitzer, K. L., 661
 Stjernholm, R., 760
 Stockdale, F. E., 941,
 950
 Stocken, L. A., 170, 171,
 172, 173
 Stocking, C. R., 412, 414,
 415, 417
 Stockley, D. J., 459, 545
 Stoeckenius, W., 789,
 797
 Stoffel, W., 371, 372, 381
 Stohs, S. J., 965
 Stoker, M., 719
 Stokstad, E. L. R., 256,
 757
 Stoll, E., 758, 763, 771
 Stollar, V., 709, 712
 Stolzenbach, F., 662
 Stominger, J. L., 328
 Stone, A. B., 315
 Stone, H. O., Jr., 540,
 552
 Stone, K. J., 327, 328
 Stoppani, A. O. M., 763
 Storck, R., 184, 217
 Störmer, F.C., 869
 Story, J. C., 503, 516
 Stotz, F. H., 674, 675, 678,
 689
 Strachan, R.G., 856, 860
 Straessle, R., 102
 Strand, M., 534, 535, 540,
 549
 Strandberg, B., 64
 Strandberg, B. S., 65
 Strandberg, R., 64
 Straub, W., 17
 Strauss, J. H., Jr., 529,
 530
 Strecker, H. J., 944, 945
 Strehler, B. L., 967
 Stretton, A. O. W., 301
 Strickholm, A., 591
 Strickland, E. H., 480
 Strickland, K. P., 338, 344,
 369
 Stritmatter, P., 115, 867,
 868, 874
 Strobach, D. R., 349
 Strober, W., 918
 Strohl, W. A., 727, 730,
 734
 Strominger, J. L., 374, 375,
 377
 Stroud, R. M., 88
 Strumeyer, D. H., 121
 Struthers, M. G., 944
 Struve, W. G., 375
 Strycharz, G.D., 630
 Stryer, L., 63, 66, 123, 431,
 432, 873
 Stuart, A., 228, 233, 242,
 244
 Stubbs, E. A., 529
 Studer, R. O., 508, 509
 Studier, F. W., 314
 Stuhlsatz, H. W., 616
 Stulbarg, M., 909

- Stumpf, P. K., 324, 328,
 405, 416, 449, 453, 759
 Stumpf, W. E., 783, 965
 Stunkard, A. J., 478
 Stupp, Y., 920
 Sturmer, E., 518
 Stutz, E., 184, 185
 Styles, W., 904
 Subak-Sharpe, H., 264,
 707
 Subirana, J. A., 136
 Subrahmanyam, D., 380
 Sue, F., 660, 661, 936,
 950
 Suelter, C. H., 660
 Sueoka, N., 140, 162, 163,
 171, 211, 213, 214, 967
 Sugimara, T., 271
 Sugimoto, K., 311
 Sugino, A., 311
 Sugino, Y., 293, 294
 Sugita, M., 344, 484,
 487
 Sugita, Y., 57, 379
 Sugiura, M., 190, 233, 244,
 245
 Sugiura, N., 879, 881
 Sugiyama, T., 263, 403, 537,
 538, 540, 541, 552
 Sugrobova, N. P., 477
 Suhara, K., 686, 687
 Sulitzeanu, D., 905
 Sullivan, D. T., 145
 Sullivan, E., 1005
 Suliman, F. G., 783
 Sumida, S., 362
 Summers, W. C., 459,
 713
 Sumper, M., 455
 Sun, G. Y., 342
 Sun, K. K., 332
 Suomalainen, H., 330
 Suriano, J. R., 726
 Surin, S. A., 477
 Surtshuk, P., 336
 Suskind, S. R., 438
 Susman, M., 301
 Susor, W. A., 660
 Sussenbach, J. S., 726, 727,
 888
 Suzuki, J., 233, 245
 Suteo, H., 953, 963
 Sutherland, E. W., 640, 649,
 650, 651, 806, 956
 Sutherland, K. E., 306
 Suttie, J. W., 271
 Suyama, Y., 254, 258, 260,
 261, 263, 264
 Suzue, G., 326
 Suzuki, A., 601
 Suzuki, C., 348, 349
 Suzuki, H., 199
 Suzuki, I., 27, 677
 Suzuki, K., 627
 Suzuki, T., 965, 1016
 Svedberg, T., 25
 Svehag, S. E., 891, 897
 Svendsen, I., 119
 Svennerholm, L., 340,
 371
 Svensmark, O., 601
 Sverak, L., 740
 Swank, R. T., 689, 690
 Swanson, J. R., 546
 Sweeley, C. C., 328, 343,
 344, 348, 374, 375, 376,
 627
 Sweeney, E. W., 934, 940,
 943, 947, 957
 Swen, H. M., 64, 65, 69, 70,
 89, 607
 Swerdlow, M., 821, 822, 827,
 835
 Swetty, P., 277
 Swett, V., 944
 Swick, R. W., 276, 405, 932,
 942, 943, 946, 961
 Swift, H., 201, 202, 254, 257,
 260, 270, 283
 Swift, M. R., 715
 Swoboda, B. E. P., 869,
 972, 975
 Sword, R. W., 374
 Sy, D., 619, 622
 Sykes, J., 199
 Sypherd, P. S., 197, 199,
 200
 Szabo, G., 395, 414
 Székely, M., 236
 Szenberg, A., 919
 Szentagothai, J., 781, 782,
 786, 787, 792
 Szent-Gyorgyi, A. G., 59,
 102, 103
 Szepesi, B., 932, 946
 Szer, W., 197
 Szewczuk, A., 601
 Szilard, L., 810
 Szolyvav, K., 444
 Szybalski, W., 139, 140,
 707
- T
- Tabachnick, J., 601
 Taber, H. W., 675, 683,
 685
 Tachibana, S., 801
 Tada, M., 229, 456,
 457
 Tagawa, K., 871
 Tait, G. H., 373
 Takagi, J., 315
 Takagi, T., 879
 Takahara, S., 953
 Takahashi, K., 110, 111, 116,
 117, 857, 858
 Takahashi, M., 727,
 730
 Takahashi, N., 601
 Takahashi, R., 835
 Takahashi, T., 334, 601
 Takai, M., 184
 Takamiya, A., 389, 402
 Takamori, S., 686, 687
 Takamuka, N., 855
 Takanami, M., 190, 198, 233,
 244, 245
 Takashige, S., 829
 Takeda, F., 592
 Takeda, I., 984, 988
 Takeda, K., 791
 Takemori, A. E., 824, 826,
 827, 831
 Takemori, N., 733
 Takemura, S., 237, 244
 Takenaka, F., 661
 Takeshita, M., 379
 Talamo, B., 454
 Taleisnik, S., 511, 522
 Tallent, W. H., 330
 Talmadge, D. W., 890, 892,
 893
 Tam, B. K., 366
 Tamaki, Y., 331
 Tamaoki, T., 188, 189, 190,
 191, 206, 217
 Tamari, Y., 830
 Tamasheff, S. N., 192
 Tamiya, H., 677
 Tamura, A., 984
 Tamura, G., 573
 Tan, W. C., 266, 267,
 268
 Tanahashi, N., 458
 Tanaka, K., 608, 615
 Tanaka, S., 326, 566, 567,
 568, 569, 580, 581, 654,
 660, 661
 Tanaka, T., 936, 950
 Tanenbaum, S. W., 330
 Tanford, C., 40, 41, 58, 68,
 890, 895, 897, 997, 1000,
 1001, 1028
 Tang, B. K., 333
 Tani, A., 177
 Taniguchi, K., 1003
 Taniguchi, S., 457, 674, 676,
 685, 686
 Tanner, W., 374
 Tappel, A. L., 625, 626,
 627
 Tarantola, V. A., 932, 947
 Tarentino, A. L., 602, 605,
 626, 937
 Tarutani, O., 877
 Tasaki, A., 692
 Tasaki, I., 789
 Tashima, Y., 591
 Tashjian, A. H., 940
 Tata, J. R., 217, 969
 Tatarskaya, R. I., 237
 Tate, S. S., 105
 Tatum, E., 649
 Tauc, L., 788
 Taunton, O. D., 651
 Tauro, P., 256
 Tavitian, A., 207, 733
 Taylor, A. L., 436
 Taylor, A. N., 591,
 592

AUTHOR INDEX

- Taylor, C. B., 270, 276, 680, 681
 Taylor, C. P. S., 674, 685, 688
 Taylor, E. K., 244
 Taylor, G., 722, 730
 Taylor, J. F., 1002, 1008, 1009, 1010, 1011, 1012, 1016
 Taylor, J. H., 150, 162, 164, 200
 Taylor, M. M., 184, 545, 546, 547, 548
 Taylor, M. W., 331
 Taylor, R. B., 916, 917, 918, 919
 Tchen, T. T., 764
 Teather, C., 722
 Tecce, G., 278, 282
 Tecson, J., 660
 Tedro, S., 694
 Teller, D. C., 28, 39, 217, 448, 641
 Telser, A., 622
 Temin, H., 741, 742, 743, 745
 Temmerman, J., 245
 Tenen, S. S., 832
 Tener, G. M., 229, 230, 234, 235, 236
 Tentori, L., 1005, 1024
 Tepperman, H. M., 937
 Tepperman, J., 937
 Teppo, A.-M., 351
 Terao, T., 120
 Terry, W. D., 892, 894, 898, 899, 906
 Terzuolo, C. A., 789
 Teasman, I., 235, 301, 306, 307, 308, 309, 310, 312
 Tettendorf, N., 950, 954
 Tevetchia, S. S., 717
 Tewari, K. K., 213, 254
 Thach, S., 529
 Thach, W. T., 784
 Theilen, G. H., 737
 Theis, G. A., 920
 Thelander, L., 296, 297, 312, 871, 872, 873
 Theorell, H., 482
 Thiebe, R., 241
 Thiele, O. W., 327, 329, 333, 337
 Thiry, J., 59, 788
 Thirion, J.-P., 235, 245, 532
 Thoenen, H., 794
 Thomas, A. V., 116
 Thomas, C. A., Jr., 133, 134, 135, 136, 139, 147, 705, 723, 724, 725
 Thomas, D. B., 608, 614
 Thomas, D. C., 726, 727, 728, 731
 Thomas, D. Y., 275, 278
 Thomas, G. J., 192
 Thomas, J. A., 644
 Thomas, L., 570
 Thomas, M., 406, 407, 408, 418
 Thompson, E. B., 943, 945, 946, 956
 Thompson, E. O. P., 514
 Thompson, G. A., Jr., 364
 Thompson, P., 660
 Thompson, R. F., 785
 Thompson, R. P., 1003
 Thompson, T. E., 41, 59, 1000
 Thompson, T. W., 395
 Thompson, W., 339, 368
 Thor, D. E., 910, 913, 914
 Thorbecke, G. J., 912
 Thorbecke, G. S., 920
 Thore, A., 398
 Thornber, J. M., 873
 Thorne, H. V., 706
 Thornton, H., 730
 Thornton, J. A., 832
 Thornton, M. P., 369
 Thorpe, N. O., 898
 Threfall, D. R., 327
 Thrower, K. D., 136, 137
 Thuring, R. W. J., 254
 Tidwell, T., 172
 Tilander, B., 64
 Till, V., 477, 481
 Tillberg, O., 868
 Timashoff, S. N., 102, 124
 Tinker, D. O., 380
 Tinoco, I., 243
 Tinoco, J., 366
 Tint, B. L., 184
 Tirri, R., 831
 Tisdale, H., 380
 Tissieres, A., 154, 184, 675, 689, 690
 Titchener, E. B., 184, 185, 258, 265
 Toal, J. N., 243
 Tobin, T., 591
 Tocanne, J.-F., 329
 Tocchini-Valentini, G. P., 459, 460, 536, 550
 Tockstein, G., 733
 Todaro, G. J., 703, 710, 714, 715, 722, 730, 737, 746, 747, 940, 955
 Todd, A. R., 189
 Todd, C. W., 893
 Tol, K., 116
 Tokarsky, E., 806
 Tolberg, A. B., 396
 Tolbert, B., 759
 Tolbert, N. E., 403, 419, 420
 Tollin, G., 868
 Tolmach, L. J., 296
 Tomasz, M., 241
 Tomatis, M. E., 522
 Tombs, M. P., 39
 Tomita, M., 110
 Tomita, S., 1011, 1015
 Tomkins, G. M., 462, 463, 943, 945, 946, 956, 965
 Tomlinson, R. V., 234
 Tompkins, W. A. F., 737
 Tongur, V., 209
 Tootle, M. L., 955
 Tooze, J., 532, 533, 538
 Topaly, V. P., 395
 Toplin, I., 735
 Topper, Y. J., 941, 950
 Torbjörnsson, L., 868
 Tort, T., 343, 344
 Tornabene, T. G., 325, 326, 327
 Torralba, A., 660
 Torres, H. N., 643, 645, 646, 651
 Torrigiani, G., 893, 910
 Torten, J., 706
 Toth, G., 112
 Tou, J. S., 370
 Tournier, P., 721
 Tourtellotte, M. E., 328
 Toury, R., 266
 Touster, O., 601, 630
 Tozer, T. N., 832
 Trabert, U., 381
 Trams, E. G., 363
 Tranelli, S., 26, 27
 Traut, R. R., 200
 Travers, A. A., 165, 459, 460, 721
 Trayler, I. P., 94, 458, 459
 Trayser, K. A., 447, 448
 Trebst, A., 870
 Trebst, A. V., 411
 Tregunna, E. B., 405, 408, 416, 417, 420
 Trentin, J. J., 722, 730
 Triggle, D. J., 882
 Trimmer, B. M., 935
 Triplett, R. F., 916
 Trostel, P. K., 1003
 Trotter, C. D., 436
 Trotter, J., 760
 Troy, F. A., 374
 Truden, J. L., 536, 551
 Trudgill, P. W., 686, 687
 Trudinger, P. A., 673, 677, 690
 Truffa-Bachi, P., 431, 437, 441, 463, 464
 Truman, D. E. S., 260, 262
 Trump, B. F., 377
 Trundle, D., 102
 Tsai, R. L., 686, 687
 Tschigale, M., 477, 481
 Tschudy, D. P., 813, 939, 946, 961
 Tsernoglou, D., 64, 67, 68, 69, 92

AUTHOR INDEX

1089

- Tsibris, J. C. M., 686, 687
 Ts'o, P. O. P., 138, 155, 170, 184, 185
 Tsosfina, L. M., 395
 Tsolas, O., 110
 Tsou, C., 69
 Tsou, K., 822
 Tsuboi, K. K., 643
 Tsuchiya, H. M., 486, 490
 Tsuji, S., 505
 Tsukada, K., 326
 Tsukagoshi, N., 573
 Tsung, C. M., 533
 Tsutsumi, E., 661
 Tsutsumi, Y., 876
 Tsuzuki, H., 74
 Tuan, D. Y. H., 151, 155, 162, 167, 173
 Tucker, A. N., 372
 Tulloch, A. P., 325, 332, 347, 348
 Tung, Y., 59, 788
 Tuppy, H., 272, 277
 Turano, C., 110
 Turini, P., 380
 Turkington, R. W., 459, 941
 Turner, D. L., 345, 616
 Turner, G. L., 676
 Turner, H. C., 714, 717, 740, 741
 Turner, J. F., 402
 Turner, K. J., 893, 896
 Turner, M. K., 945
 Turner, M. W., 898
 Turnock, G., 199
 Tuzimura, K., 676
 Tweedell, K. S., 735
 Tyam, M. L., 917, 918
 Tyler, A., 254
 Tyuma, I., 992, 994, 995, 1004, 1014, 1016
 Tzagoloff, A., 273, 282, 371
 Tze-Yuen, R. Y., 328
 Tzur, R., 382
- U
- Uchida, S., 706, 707
 Uchida, T., 237, 241
 Udem, L., 1016, 1017
 Udenfriend, S., 794
 Ueda, S., 730
 Uesugi, S., 591
 Uhendorf, B. W., 813
 Uhr, J. W., 912
 Ukita, T., 110, 120
 Ullman, H. L., 340
 Ullrich, K. J., 664
 Ullrich, W., 412, 414, 417
- Ulshofer, H. W., 335
 Umbarger, H. E., 431, 889
 Umetani, K., 329, 336, 373
 Unanue, E. R., 911, 912, 914
 Ungar, G., 830, 831
 Unt, H., 391, 393
 Urakami, C., 329, 336, 373
 Urbach, W., 412, 414, 417
 Uretsky, S. C., 207
 Uribe, E. G., 392, 393, 399
 Urnes, P. J., 987
 Urry, D. W., 868, 995
 Ursprung, H., 145, 962
 Usardi, M. M., 822
 Usher, D. A., 94
 Ushijima, Y., 876
 Utsumi, S., 606, 609, 611, 613, 615, 618, 897, 898, 899
 Utal, W. R., 781, 786
 Utter, M. F., 35, 757, 759, 762, 763, 764, 765, 773
 Uyeda, K., 27, 114
 Uziel, M., 243, 244
- V
- Vagelos, P. R., 351, 362, 449, 452, 453, 454, 582, 758, 759, 760, 762
 Valadares, J. R. E., 950
 Vale, W., 504, 505, 506, 508, 509, 522
 Valente, F., 278
 Valentine, A. F., 738
 Valentine, F. T., 910, 913
 Valentine, R. C., 27, 28, 35, 36, 37, 38, 531, 532, 534, 535, 540, 549, 725, 726, 762, 897, 902
 Valle, B. L., 71, 72, 77, 78, 82, 83, 101, 104, 110, 112, 118, 119, 121
 Vamos, N., 648
 Vanaman, T. C., 94, 458, 459, 625, 941
 Van Baalen, C., 410
 Vanbellinghen, P., 860, 661
 Van Bibber, M. J., 303
 van Bruggen, E. F. J., 35, 39, 254, 255, 724
 Vance, D. E., 348
 van Dam, K., 390, 391, 393, 399
 Van Deenen, L. L. M., 336, 339, 342, 346, 360, 363, 364, 387, 389, 370, 373, 380, 381, 574
 Vandekerckhove, J., 533
- Vandenbergh, A., 542, 547
 Van den Bosch, H., 363, 381
 Vandenbussche, P., 532
 Vandendriessche, L., 532
 Vandenheuvel, F. A., 808
 Vanden Jevel, W. J. A., 324
 Van der Eb, A. J., 724
 Vanderpool, E. A., 723, 730
 Vandor, S. L., 368
 Van Golde, L. M. G., 339, 360, 363, 364, 387, 381
 Van Handel, E., 664
 Van Hoof, F., 626, 627
 Van Kesteren, L. W., 724
 Van Montagu, M., 533
 Vanneste, M., 686
 VanPraag, D., 626
 van Rapenbusch, R., 463, 464
 Van Rood, J. J., 913
 Van Slyke, D. D., 4, 5, 6
 Van Steneninck, J., 577
 Van Styvendaele, B., 542, 547
 Varanasi, U., 335
 Varga, S. L., 60, 856
 Varmus, H. E., 567, 581
 Varner, J. E., 931
 Varnum, J. C., 64, 69
 Varon, S., 27
 Varrichio, F., 211
 Vaskovsky, V. E., 338
 Vasova, G. G., 513
 Vasquez, C., 533
 Vass, W., 738
 Vassalli, P., 908
 Vaughan, M., 650
 Vaughan, M. H., 188, 189, 202, 204, 208, 255, 931, 986
 Vaughan-Jones, R., 985
 Veatch, R. M., 824
 Weber, D. F., 69, 855, 856, 857, 860
 Vecchini, P., 998, 1003, 1005
 Veeger, C., 869, 874, 877, 879, 881, 882
 Veenkamp, F. J. N., 628
 Veldstra, H., 103
 Velicer, L. F., 728
 Velick, S. F., 900
 Vellins, C. E., 105
 Venettacci, D., 278
 Venkstern, T. V., 237, 244
 Vennesland, B., 12, 13, 403, 869
 Venn-Watson, E. A., 661
 Vergani, C., 662
 Verhassel, J.-P., 233, 245, 530, 531, 532
 Verity, M. A., 881

AUTHOR INDEX

- Verney, E., 967
 Vernikos-Danellis, J., 783
 Vernon, C. A., 72, 76
 Vernon, L. P., 394, 400,
 403, 674, 690
 Veronese, F. M., 105
 Verri, R. A., 832, 834
 Vertua, R., 822
 Vesco, C., 206, 255, 259,
 265
 Vesell, E. S., 661, 662, 943,
 959
 Vestling, C. S., 26, 27,
 662
 Viale, R. O., 487
 Viehauser, G., 263, 264
 Vigier, P., 740, 741, 743,
 745, 746
 Vignais, P. M., 268,
 381
 Vignais, P. V., 261
 Villa, L., 662
 Villalobos, J., 201
 Villar-Palasi, C., 639-72;
 447, 448, 640, 643, 644,
 645, 646, 651, 652, 653
 Villemez, C. L., 374
 Vincent, W. S., 217
 Vinograd, J., 184, 185, 253,
 254, 255, 262
 Viluela, E., 532, 533, 536,
 537, 538, 540, 541, 543,
 550, 658, 936
 Vishniac, W., 373
 Visser, J., 874, 875
 Visser, J. P., 856
 Visser, J. W. E., 89
 Vitale, L., 869
 Vitali, R. A., 89, 856
 Vitois, E., 295, 298, 871,
 873
 Vivaldi, G., 1024
 Viveros, O. H., 803
 Vlitos, A. J., 406
 Voegtlin, C., 14
 Voetberg, H., 874
 Vogele, P., 613
 Vogt, M., 709, 710, 712, 719,
 832
 Vogt, P. K., 738, 739,
 742
 Volk, R. J., 418, 419
 Volkenstein, M. V., 487
 Vollmerhaus, E., 490
 Vollmerhaus, W., 490
 von Békésy, G., 781, 786
 Von Euler, C., 778, 785, 786,
 792
 Von Euler, H., 71
 von Fellenberg, R., 58
 von Saltza, M., 850,
 851
 Von Stedingk, L. V., 395,
 396, 397, 398
 von Tigerstrom, M., 229,
 230
 Vos, J., 790
- Vötsch, W., 254
 Vratsanos, S. M., 117
 Vredenberg, W. J., 399
- W
- Wada, A., 136, 137
 Wada, K., 115
 Waechter, C. J., 368
 Waggoner, A. S., 102
 Wagh, P. V., 603, 605
 Wagner, E. K., 192, 202,
 204, 205
 Wagner, M., 480
 Wagner, R. P., 430
 Wagner, R. R., 623
 Wagner, T. E., 243
 Wahl, P., 897
 Waite, M., 381, 760
 Wakabayashi, I., 519,
 520
 Waki, M., 857
 Wakid, N., 657, 658
 Wakil, S. J., 377, 449, 452,
 454, 760
 Waku, K., 363
 Walborg, E. F., 601
 Wald, G., 59, 787
 Wald, R., 381
 Waldmann, T. A., 918
 Walker, A. A., 389-428;
 405, 407, 408, 411, 412,
 413, 414, 415, 416, 417,
 418
 Walker, D. G., 656, 936,
 950
 Walker, I. O., 158
 Walker, J. B., 949,
 959
 Walker, M. S., 949, 959
 Walker, P. E., 660
 Walker, P. M. B., 133, 141,
 146, 147, 178
 Walker, R. J., 788
 Wallace, B. J., 441, 442
 Wallace, H., 143, 201, 213,
 214, 215, 219
 Wallace, J., 736
 Wallace, P. G., 265,
 278
 Wallace, W., 674
 Wallach, D. F. H., 281, 282,
 601, 630
 Wallen, P., 610
 Wallenfels, K., 107
 Wallis, D. I., 828
 Wallis, V., 916, 917
 Walpole, A. O., 513, 514
 Walsh, B. T., 477
 Walsh, D. A., 447, 642,
 648
 Walsh, E. O.F., 829
 Walsh, K. A., 78, 88, 114,
 119
 Walter, C., 486, 487
 Walter, H., 457
 Walter, L. A., 581
- Walter, R. N., 562, 563
 Walter, R. W., 654
 Walters, E., 656
 Walters, S. L., 118
 Walti, A., 107
 Walton, E., 856
 Walton, M., 334, 342
 Waner, J. L., 737
 Wang, J. H., 84, 85, 641,
 642, 695
 Wang, L., 873, 874
 Wang, R. J., 567, 568, 580,
 581
 Wang, S. S., 848, 855
 Wang, T. P., 298
 Wang, T. Y., 175
 Warburg, O., 677
 Ward, D. N., 502, 503, 504,
 505, 506, 507, 508, 509,
 513, 514, 601
 Ward, J. B., 574
 Ward, R., 535, 540,
 549
 Warden, D., 706
 Wardi, A. H., 616
 Ware, G. C., 484
 Warfield, A. S., 243
 Warner, A., 829
 Warner, H. R., 296, 302,
 304, 305, 307, 312, 315
 Warner, J. R., 188, 189, 202,
 204, 206, 207, 208, 931, 966
 Warner, N. L., 919
 Warner, N. R., 905
 Warner, R. C., 58, 259, 541,
 542, 759, 762
 Warocquier, R., 735
 Warren, C. D., 344
 Warren, L., 338, 628
 Warren, R. J., 311, 312,
 314
 Warren, S., 37, 629
 Warrington, R. C., 230
 Warshawsky, H., 622
 Warthen, D., 332
 Wasemiller, G., 629
 Washington, C. L., 951
 Wassef, M. K., 323-58;
 336
 Wasserman, N., 117
 Wasserman, R. H., 591,
 592
 Wasson, G., 449, 455
 Watanabe, A., 789
 Watanabe, H., 531, 536, 537,
 551, 552, 681
 Watanabe, I., 528, 529, 544,
 676
 Watanabe, K., 585, 834
 Watanabe, M., 529, 530, 531,
 532, 536, 537, 550, 551, 552,
 967
 Watanabe, S., 515, 516, 517,
 706, 707
 Watari, H., 992
 Waterhouse, C., 481
 Watkins, J. F., 715, 720

- Watkins, W. M., 606, 614, 621, 624
 Watson, H. C., 37, 64, 65, 66, 69, 70, 83, 88, 984, 1028
 Watson, J. D., 154, 184, 196, 199, 208, 702
 Watson, S. W., 328
 Watson-Williams, E. J., 662
 Watts, J. W., 966
 Watts, R., 333, 334
 Watts-Tobin, R. J., 1009
 Waxdal, M. J., 114, 609, 610, 628, 893, 894, 896, 898
 Waxman, A. D., 961
 Waxman, S. G., 809
 Way, E. L., 798, 821, 824, 826, 828, 829, 830, 832
 Weatherall, D. J., 986
 Weaver, N., 331
 Weaver, R. E., 329
 Weaver, R. H., 294
 Weavers, B., 267
 Webb, L. E., 52, 53, 979
 Webb, T. E., 947
 Webber, J. M., 617
 Weber, A. I., 521
 Weber, B. H., 119, 122
 Weber, C. N., 271
 Weber, C. S., 205, 212, 213, 214, 215, 219
 Weber, G., 661, 868, 869, 897, 936, 937, 964
 Weber, J. A., 897
 Weber, K., 465, 466, 532, 533, 538
 Weber, M. J., 260
 Weber, M. M., 940, 943, 947, 957
 Weber, P., 614, 629
 Webster, G. R., 380
 Webster, R. E., 537, 538, 539, 540, 549
 Webster, R. G., 903
 Wedel, H., 531, 534, 535
 Weed, L. L., 303
 Weenink, R. O., 325, 332
 Wegman, J., 438
 Wehrli, W., 244
 Wei, R. D., 771, 772
 Wei, S., 645
 Weicker, H., 759
 Weigle, J., 706
 Weigle, W. O., 917, 920
 Weil, G., 1001
 Weil, R., 706, 709, 710
 Weiler, E., 913
 Weiller, I. J., 913
 Weil-Malherbe, H., 813, 833
 Weinbaum, G., 601
 Weinberg, A., 736
 Weinberg, A. N., 813
 Weinberg, R., 484
 Weinberg, R. A., 174, 203, 204, 205, 206, 207
 Weiner, H., 121
 Weinges, K. F., 842
 Weinhouse, S., 656, 657, 936
 Weinstein, D. B., 338
 Weinstock, M., 824, 828, 835
 Weintraub, S., 309
 Weinzierl, J. E., 69
 Weisberger, A. S., 915
 Weiser, M. M., 378, 577
 Weiskopf, E. A., 877
 Weismann, B., 625
 Weiss, B., 311, 649, 832
 Weiss, G. B., 230, 239, 244
 Weiss, J. F., 229
 Weiss, M. C., 720
 Weiss, M. F., 474, 475, 481, 488
 Weiss, S. B., 138, 145
 Weissbach, A., 403, 407
 Weissbach, H., 460, 461, 462
 Weissman, A., 802, 832
 Weissman, S., 952
 Weissman, S. M., 195, 209, 210, 217, 230, 236, 239, 244, 709, 728, 729, 734
 Weissmann, B., 602, 608, 625, 626
 Weissmann, C., 237, 238, 243, 245, 528, 531, 532, 533, 536, 540, 541, 542, 543, 544, 546, 547, 548
 Weith, H. L., 231, 233, 234, 240, 241, 242, 243, 245, 530, 531
 Weltzel, D. R., 876, 877
 Weltzman, P. D. J., 899
 Wekell, J. C., 326, 334
 Weksler, M., 655
 Welland, F. H., 961
 Wellburn, A. R., 327, 328
 Wellner, D., 867, 875, 876, 877, 878, 879, 881, 882
 Wellner, V. P., 768
 Wells, M. A., 380
 Wells, R., 146, 256
 Wells, W. W., 449, 453
 Welsh, K., 347
 Weisbarth, H. D., 891
 Weltman, J. K., 897
 Wendelberger, G., 844, 845, 846
 Wendt, G., 346
 Wenger, B., 760, 769
 Wenger, J. I., 447, 448
 Wenger, J. T., 645, 651
 Wensink, P., 705, 723, 724, 725
 Werchau, H., 709, 712
 Werman, R., 876
 Werner, P. E., 868
 Werries, E., 608, 626
 Wesley, M. E., 663
 West, J., 403, 404
 West, K. R., 391, 400, 403
 Westall, F. C., 88
 Westerfeld, W. W., 937
 Westhead, E. W., 110
 Westheimer, F. H., 93, 94, 768
 Westmoreland, B. C., 139, 140
 Weston, J. A., 809
 Westphal, H., 709, 712, 715, 716, 720
 Westphal, O., 350
 Westphal, U., 601, 628
 Wetmur, J. G., 136, 137
 Wexler, B. C., 822
 Weygand, F., 845, 846, 849, 855, 856, 861
 Whatley, F. R., 410, 411, 413, 414, 416
 Wheat, R., 350
 Whelan, H. A., 26
 Whelan, W. J., 640
 Whiffen, A. J., 280
 Whipple, M. B., 584
 Whistance, G. R., 327
 White, A. E., 199
 White, A. M., 771
 White, D. C., 327, 336, 337, 343, 372, 373, 674, 675, 685
 White, D. O., 705, 726
 White, E. A., 431
 White, E. L., 943, 959
 White, F. H., Jr., 69
 White, F. N., 805
 White, G. L., 370
 White, H. B., Jr., 327, 365
 White, W. B., 492
 White, W. F., 503, 514, 515, 516
 Whiteley, A. H., 144, 662
 Whiteley, H. R., 144
 Whifield, P. R., 242
 Whitmire, C. E., 703, 737, 746
 Whitney, P. L., 890
 Whittaker, V. P., 790
 Whitten, W. K., 628
 Whittick, J. S., 327
 Whittingham, C. P., 395, 403, 407, 408, 419
 Whittle, E. D., 967
 Wiame, J., 969
 Viberg, J. S., 302, 303, 304, 305, 310, 311
 Wichertjes, T., 114
 Wicken, A. J., 336

AUTHOR INDEX

- Wicks, W. D., 704, 941, 948, 956, 964, 965, 967
 Widdas, W. F., 578
 Widholm, J., 143
 Widnell, C., 363
 Wiebers, J. L., 244, 245
 Wiede, D. E., 478
 Wiegand, U., 760, 769
 Wicker, H.-J., 491
 Wieland, T., 842
 Wiener, A., 730
 Wiersma, C. A. G., 781, 782, 786
 Wierzchowski, K. L., 131
 Wiese, W. H., 734
 Wiesel, T. N., 800
 Wigzell, H., 890
 Wikler, A., 821, 822, 830
 Wikler, M., 893, 894
 Wilairat, P., 112
 Wilbrandt, W., 565, 578
 Wilchek, M., 119, 120, 121, 122, 849, 859
 Wilcox, P. E., 69, 84, 87, 117
 Wild, D. G., 199
 Wildman, S. G., 213, 260, 415
 Wiley, D. C., 465, 466
 Wiley, W. R., 588
 Wilk, S., 104, 114
 Wilkie, D., 275, 278
 Wilkins, M. H. F., 161, 192, 194
 Wilkinson, G. N., 491
 Wilkinson, J. H., 661
 Wilkinson, J. M., 893
 Wilkinson, S. G., 347
 Will, G., 36
 Willard, J. M., 410
 Willecke, K., 453, 454, 455, 456
 Willems, H., 843, 847, 849, 850
 Willems, M., 203, 204, 205, 207, 208
 Willenbrink, J., 414, 417
 Willettes, N. S., 968
 Williams, A., 76, 77
 Williams, B. J., 652
 Williams, C. H., Jr., 296, 872, 873, 874, 875
 Williams, F. C., 474
 Williams, G. R., 119, 266, 361, 480
 Williams, H. E., 644
 Williams, I., 315
 Williams, J., 601, 610, 612
 Williams, J. F., 487
 Williams, J. W., 40
 Williams, L. S., 942
 Williams, M. W., 860
 Williams, N., 826
 Williams, N. J., 850, 851, 852
 Williams, R. C., 705
 Williams, R. J. P., 72, 82, 99, 993
 Williams, W. A., 407, 416, 417
 Williams-Ashman, H. G., 965
 Williamson, A. R., 145
 Williamson, D. H., 253, 256
 Williamson, I. P., 454
 Williamson, J. R., 480, 549
 Williamson, R., 218
 Willick, G. E., 41
 Williamson, C. R., 443, 444
 Willson, C., 200
 Wilson, A. C., 662
 Wilson, D. A., 431, 433, 434, 436
 Wilson, D. B., 911
 Wilson, D. E., 745, 746
 Wilson, G., 566, 567, 568, 580, 581, 584
 Wilson, H. R., 161
 Wilson, J. B., 984
 Wilson, J. D., 965
 Wilson, J. E., 287, 874
 Wilson, K. A., 109
 Wilson, O. H., 587, 589
 Wilson, R. G., 744
 Wilson, T. H., 565, 568, 570, 575, 578, 580, 581
 Wilt, F. H., 174, 931, 986
 Wimmer, E., 229, 233, 234, 245
 Winer, A. D., 512
 Winget, G. D., 413
 Winkler, H., 381
 Winkler, H. H., 565, 568, 570, 575, 578, 580
 Winnick, R. E., 514
 Winnick, T., 514, 771
 Winnick, M., 788
 Winocour, E., 706, 707, 709, 712, 713, 716
 Winocur, B. A., 396
 Winter, C. A., 824
 Winter, D. B., 244
 Winter, W., 413
 Winterhalter, K. H., 984, 991, 995, 998, 1011, 1015, 1016, 1023, 1030, 1031, 1036
 Wintermeyer, W., 241
 Wintersberger, E., 258, 263, 264, 271
 Winzler, R. J., 601, 602, 603, 605, 608, 614, 618, 619, 622, 629, 630
 Winzor, D. J., 41
 Wiren, G., 64
 Wirtz, K. W. A., 270, 371
 Wise, E. M., Jr., 937, 954
 Wiskick, J. T., 391, 400, 403
 Wissler, F. C., 900
 Withycombe, W. A., 661
 Witkop, B., 102, 119, 120, 121
 Witt, H. T., 394, 396, 399, 400, 401, 402, 403
 Wittenberg, B. A., 991, 998, 1036
 Wittenberg, J. B., 991, 998, 1036
 Witter, R. L., 736
 Wittiaux, R., 969
 Wittkop, J., 403
 Wittliff, J. L., 934, 955, 964, 967
 Wittman, H. G., 528
 Wittmann-Liebold, B., 533
 Witz, J., 192
 Witzel, H., 92
 Wodick, R., 474
 Woenkhaus, Chr., 106, 107, 111
 Woerley, D. L., 900
 Woese, C. R., 197, 211
 Wofsy, L., 898
 Wohl, R. L. C., 989
 Wohlrab, F., 876
 Wohltmann, H. J., 663
 Wolf, B., 162, 873
 Wolf, D. P., 640
 Wolf, F. J., 772
 Wolf, I. A., 330
 Wolf, P. S., 823
 Wolfe, L. S., 349
 Wolfe, R. G., 602
 Wolfe, S. L., 151, 152, 155, 160
 Wolff, J., 112
 Wollmann, R. L., 744
 Wolstencroft, R. A., 909
 Wolstenholme, D. R., 254, 255, 283
 Wothers, B. G., 64, 65, 69, 70, 89, 90, 91, 107
 Womack, F. C., 27, 656
 Wonacott, A. J., 64
 Wood, D. D., 186, 187, 188, 213, 254, 256, 258, 261, 263
 Wood, H. G., 405, 757, 758, 759, 760, 761, 764, 766, 767, 769
 Wood, R., 334, 335, 341, 342, 343, 364
 Wood, T., 861
 Wood, W. A., 654
 Wood, W. B., 301, 309, 312
 Wood, W. H. L., 408
 Woodley, R. W., 693
 Woodrow, I. L., 334
 Woods, J. H., 823
 Woods, K. F., 898

- Woods, L. A., 826
 Woods, P. S., 200
 Woodward, D. O., 277
 Woodward, W. D., 949
 Wool, I. G., 967
 Woolacott, M., 627
 Woolhouse, B. A., 92
 Woosley, R. L., 664
 Work, T. S., 251-90; 253,
 257, 260, 262, 271, 272,
 274, 275, 277, 279
 Worsfold, M., 367
 Wortis, H. H., 916
 Wray, J. L., 931
 Wright, A., 328, 374,
 375
 Wright, B., 477
 Wright, C. S., 64, 65, 69,
 70, 83, 88, 984
 Wright, D. A., 662
 Wright, H. F., 722
 Wright, H. T., 69, 84,
 87
 Wright, J. E., 662
 Wright, L. D., 771, 772
 Wrigley, N. G., 35, 762
 Wriston, J. C., 28, 601,
 606
 Wu, H., 5
 Wu, H. C., 601, 630, 722
 Wu, R., 658
 Wu, T. W., 380
 Wu, W. H., 901
 Wu, Y.-C., 601, 602, 603,
 604, 605, 612
 Wulff, D. L., 307
 Wunderlich, V., 282
 Wunzer, W. H., 965
 Wünsch, E., 842, 844, 845,
 846, 849
 Wunzsch, T., 662
 Wur, U., 164, 167
 Wurtman, R. J., 967
 Wuster, K. H., 660
 Wüthrich, K., 55, 56, 990,
 991, 992, 1036
 Wyatt, G. R., 194, 301
 Wybrandt, G. B., 117
 Wyckoff, H. W., 64, 65, 67,
 68, 69, 70, 73, 92, 93, 94,
 111, 853, 855
 Wykle, R. L., 335, 364
 Wyluda, B. J., 990
 Wyman, J., 26, 27, 37, 57,
 483, 484, 487, 978, 982, 987,
 990, 991, 993, 995, 996, 997,
 998, 1002, 1003, 1004, 1005,
 1006, 1007, 1008, 1009, 1010,
 1011, 1012, 1013, 1014, 1015,
 1016, 1018, 1019, 1021, 1022,
 1023, 1024, 1027, 1029, 1030,
 1031, 1033, 1034, 1035, 1036
 Wyngaarden, J. B., 813, 938,
 942, 959
 Y
 Yabe, Y., 722, 730
 Yabuuchi, H., 339
 Yager, M., 768, 769
 Yagi, K., 66, 68, 116, 875,
 876, 879, 880, 881, 882
 Yagihara, Y., 370
 Yaguchi, M., 350
 Yajima, H., 844
 Yakulis, V., 985, 1023
 Yamagami, H., 136,
 137
 Yamagami, K., 119
 Yamaguchi, H., 602, 605,
 612
 Yamaguchi, K., 951
 Yamaguchi, S., 677
 Yamaji, K., 879
 Yamakawa, T., 346, 348
 Yamakubi, S., 344
 Yamamo, T., 682, 683, 686,
 688
 Yamamoto, A., 346
 Yamamoto, I., 830
 Yamamoto, Y., 229
 Yamamura, T., 1016
 Yamamura, Y., 350
 Yamazaka, T., 678, 689,
 691
 Yamane, T., 55, 56, 990,
 991, 992, 1036
 Yamano, T., 879, 880
 Yamashina, I., 601, 602,
 604, 605, 625, 630
 Yamashiro, D., 513
 Yamashita, T., 727,
 734
 Yamauchi, F., 603
 Yamazaki, E., 504, 514
 Yamazaki, H., 537, 538, 551,
 552
 Yamazaki, R. K., 419
 Yanaihara, C., 857
 Yanaihara, N., 857
 Yanari, S., 77, 82
 Yang, C. C., 474, 485
 Yang, J. T., 987
 Yang, P. C., 455, 456
 Yang, S., 279
 Yang, S. F., 869
 Yang, S. T., 27
 Yaniv, M., 230, 244
 Yankeeov, J. A., Jr., 116
 Yankofsky, S. A., 140
 Yano, I., 337, 366
 Yano, Y., 110, 270,
 280
 Yanofsky, C., 140, 197, 198,
 213, 431, 432, 433, 434, 435,
 436, 437, 967
 Yaoi, H., 677
 Yarbrough, J. W., 296
 Yarbrough, L. R., 119
 Yarmolinsky, M. B., 930
 Yaron, A., 909
 Yarosh, E., 551
 Yasui, M., 123
 Yasumura, Y., 940
 Yasunobu, K. T., 123
 Yates, R. A., 295,
 465
 Ycas, M., 217, 484, 487
 Yee, K. S., 482
 Yeh, Y. C., 301, 302, 306,
 308, 309, 310, 312
 Yeisley, W. G., 484
 Yip, A. T., 646
 Yoda, A., 591
 Yohn, D. S., 721, 730
 Yonemitsu, O., 117
 Yoneyama, Y., 379
 York, S., 431, 432
 York, S. S., 84, 85
 Yos, J. M., 810
 Yoshida, A., 940, 952, 963,
 989
 Yoshida, K., 197
 Yoshida, M. C., 964
 Yoshida, N., 860
 Yoshida, T., 908
 Yoshiike, K., 706, 707
 Yoshija, F., 366
 Yoshikawa, H., 162
 Yoshikawa-Fukada, M., 206
 Yoshikura, H., 741
 Yosizawa, Z., 348, 601, 613,
 615
 Yotsuyanagi, Y., 254,
 265
 Young, B. A., 622
 Young, C. W., 296
 Young, D. L., 368, 759,
 771
 Young, G. T., 860
 Young, J. D., 854
 Young, M., 59
 Young, M. R., 759
 Young, N. A., 132
 Young, R. J., 230
 Young, R. W., 860
 Young, W. J., 813
 Yount, W. J., 891
 Yphantis, D. A., 40
 Yu, C.-A., 686, 687, 1012,
 1013
 Yu, C. I., 58
 Yu, R., 271, 274, 278
 Yu, S.-H., 565
 Yuan, D., 197
 Yuan, L., 910
 Yuan, R., 314
 Yubisui, T., 675
 Yudelevich, A., 316
 Yueng, D., 948
 Yugari, M., 937
 Yuki, A., 529, 530,
 552
 Yunis, A. A., 640
 Yurovitskaya, N. W., 567
 Z
 Zabel, R., 69
 Zabin, I., 578, 579
 Zaccari, J. J., 741
 Zachau, H. G., 228, 229,

AUTHOR INDEX

- Zehnder, K., 847
 Zahler, W. L., 360
 Zahn, D., 477, 481
 Zahn, H., 69, 844,
 849
 Zahner, J. C., 489
 Zajdela, F., 931, 966
 Zakrzewski, S. F., 944
 Zalenskii, O. V., 414,
 417
 Zalik, S., 188
 Zamenhof, S., 806
 Zamir, A., 195, 244
 Zanetti, G., 296, 872,
 873
 Zapponi, M. C., 659
 Zar, M. A., 828
 Zardi, L., 255
 Zarkadas, C. G., 641
 Zarlengo, M. H., 895
 Zatz, M., 374
 Zavada, V., 550, 551
 Zec, J., 602
 Zehavi-Willner, T., 209,
 213, 217
 Zehnder, K., 847
 Zeigler, B., 484
 Zelitch, I., 403, 416, 419,
 420
 Zervas, L., 848, 849
 Zeylemaker, W. P., 869
 Zichichi, M. L., 706
 Zidberman, D., 621,
 624
 Zieverink, W. D., 876
 Zilling, W., 198, 207,
 280
 Zilversmit, D. B., 270, 371,
 480
 Zimm, B. M., 133
 Zimmerman, A. M., 172,
 173
 Zimmerman, B., 517
 Zimmerman, E. F., 189, 190,
 202, 203, 204, 208
 Zimmerman, J. E., 860
 Zimmerman, J. K., 56
 Zimmerman, R. A., 197
 Zimmerman, S. B., 294, 298,
 301, 302, 303, 309
 Zinder, N. D., 528, 529, 530,
 532, 533, 534, 535, 536, 537,
 538, 539, 540, 542, 543, 544,
 547, 549, 550, 551, 552
 Zinkham, W. H., 661,
 662
 Zinkl, J. G., 964
 Zito, R., 661, 982, 1011,
 1012, 1030
 Zito-Bignami, R., 218
 Zmudka, M., 877,
 878
 Zor, U., 807
 Zubay, G., 161, 167,
 194
 Zuber, H., 847
 Zukerkandl, E., 121
 zur Hausen, H., 734
 Zutra, L. E., 230
 Zweiman, B., 910,
 914
 Zwick, A., 844
 Zwickey, R. E., 730
 Zwisler, O., 877
 Zylber, E., 259, 265

SUBJECT INDEX

A

- Acetoacetate decarboxylase, 32
 Acetobacter suboxydans cytochromes of, 681, 682
 heme protein of, 680, 681
 lactate dehydrogenase in, 681
 Acetylcholine
 cell response to, 788
 metabolism of, 792, 793
 and narcotic effects, 835
 as transmitter
 in central nervous system, 790, 791, 798, 797
 excitatory, 792
 in muscle, 789, 790
 in peripheral nervous systems, 790
 Acetyl coenzyme A carboxylase assay of, 940
 kinetic properties, 762, 763, 769
 levels of, 938, 959
 lipid stimulation of, 379
 structure of and function, 759, 762, 763
 oligomeric, 762
 subunits of, 33, 780-62
 subunits of
 biotin in, 760-62
 dissociation of, 760, 762
 properties of, 33
 separation of, 760
 N-Acetyl galactosamine
 in glycoproteins, 600, 605, 606, 608, 611, 613-15, 621
 N-Acetyl glucosamine
 in glycoproteins, 600, 604-7, 612-15, 621, 624, 625
 O-Acetylsérine sulfhydrylase, 30, 462
 α -Acid glycoprotein carbohydrate of, 603-5, 612
 nitration of, 119
 Acidosis
 and alkali reserve, 3
 and ammonium chloride, 7, 8
 and bicarbonate, 6-8
 in diabetes, 8
 and fatigue, 3
 HC1 caused, 7
 and muscle electrolytes, 11
 Aconitase, 267
 Acrasin, 787
 Acriflavine
 DNA polymerase inhibition by, 257
 mitochondrial mutants from, 253
 ACTH
 and cyclic AMP levels, 648-50
 narcotics effect on, 822
 releasing factor for
 demonstration of, 517
 nature of, 517-19
 origin of, 503, 504
 purification of, 517, 518
 structure of, 517, 518
 and vasopressin, 517, 518
 Actin
 carbethoxylation of, 112
 histidine in, 112
 nitration of, 119
 oxidation of, 119
 Actinomycin D
 actions of, 942, 956
 and bacteriophage synthesis, 550
 DNA binding of, 171
 and enzyme degradation, 946
 and glycogen deposition, 951
 and messenger RNA transport, 986
 and narcotic tolerance, 830
 and protein synthesis, 984-66
 and ribosomal RNA conversion, 207
 and RNA biosynthesis, 200, 203
 and superinduction, 956, 964, 965
 and viral RNA synthesis, 713
 Acyl carrier protein
 properties of, 452, 453
 role of, 450-56
 Acyl-coenzyme A synthetase, 268
 Acyl-coenzyme A transferase, 268
 Acyldihydroxyacetone phos-
- phate, 361
 Acyl glycoses, 347, 348
 N-Acylphosphatidylethanolamine, 346
 Addiction
 to barbituates, 797, 798
 biochemistry of
 and acetylcholine, 835
 and analgesic effects, 822-24, 833
 and catecholamines, 833
 and dopamine turnover, 833-35
 hormones, effect on, 821, 822, 832, 833
 and 5-hydroxytryptamine turnover, 832
 metabolic effects, 827-29
 and physical dependence, 823, 830
 receptor sites, 823, 824
 significant effects on, 821, 822
 stereospecificity in, 822, 824, 825
 tolerance, 829-31
 to morphine, 798
 Adenohypophysis
 anatomy of, 501
 hormone secretion by, 501, 502
 S-Adenosylmethionine, 367, 368
 Adenoviruses
 abortive infection by
 DNA synthesis in, 733, 734
 events in, 733
 helper virus role, 734
 at high temperature, 734, 735
 and oncogenesis, 733
 defective particles, 706
 DNA of
 infectivity of, 725
 integration of, 730, 731
 and oncogenesis, 724
 properties of, 723-25
 replication of, 725
 transcription of, 728-31
 groups of, 722-24
 hybrids of, 734
 infection by
 abortive, 733-35
 and DNA synthesis, 727-30

SUBJECT INDEX

- early events in, 726, 727
 efficiency of, 726
 and enzyme synthesis, 729, 730
 growth cycle, 726
 productive, 726-30
 and protein synthesis, 727, 728
 and RNA synthesis, 727-30
 and transformation, 730-33
 messenger RNA of amounts of, 731
 base composition of, 731, 732
 classes of, 731
 and DNA integration, 730, 731
 resolution of, 729
 synthesis of, 728
 mutants of, 733
 oncogenesis by demonstration of, 722, 723
 and RNA synthesis, 728, 729
 and virus properties, 723-25
 properties of, 705, 706, 725
 replication of arginine role in, 728
 events in, 708
 macromolecule synthesis in, 727-30
 structure of, 725, 726
 transformation by genes involved, 722, 723, 731, 732
 and oncogenesis, 730
 and transplantation antigens, 732, 733
 and tumor antigens, 732-34
 and viral DNA integration, 715, 716, 730, 731
 and viral messenger RNA, 731, 732
 and virus rescue, 720
Adenylate kinase
 in cilia, 485
 and glycolysis oscillations, 488
 localization of, 268
Adenyl cyclase
 ACTH effect on, 649-51
 epinephrine effect on, 647-50
 glucagon effect on, 647-50
 insulin effect on, 650
 luteinizing hormone effect on, 649
 and phosphorylase activation, 642
 thyroid hormone effect on, 648, 649
ADP-glucose pyrophosphorylase, 403
Aerobacter aerogenes
 oxalacetate decarboxylase of, 767
 sugar phosphorylation in, 654
 sugar transport in, 562, 563, 566, 577
Affinity chromatography, 859, 860
Alanylphosphatidylglycerol, 369
Albumin
 acetylmidation of, 115
 guanidination of, 115
 iodine oxidation of, 102
 tyrosine of, 123
Alcohol dehydrogenase
 alkylation of, 107
 dissociation of, 114
 maleimide inhibition by, 108
 maleylation of, 114
 NADH binding by, 482
 subunits of, 30, 31
 sulphydryl groups of, 108
Aldehyde oxidase, 883
Aldolase
 dissociation of, 27, 114
 forms of, 658
 hybridization of, 28
 maleylation of, 114
 mechanism of action, 658
 nitration of, 119
 oxidation of, 119
 simulation of, 477
 structure of, 658, 659
 subunits of, 29-31, 36, 658
 succinylation of, 114
 symmetry of, 36, 37
Aldosterone, 965
Alfalfa mosaic virus, 33
Alkaline phosphatase
 levels of, 944
 release of, 582
 subunits of, 30
Alkalosis
 and muscle electrolytes, 11
 production of, 7
Alkyl ether phosphatides
 analysis of, 342
 biosynthesis of enzymes of, 364
 pathway of, 364, 365
 requirements of, 364
 synthesis of, chemical, 342, 343
N-Alkyl-5-phenylisoxazolium salts, 117, 118
Allosteryism
 in antigen-antibody reactions, 899-902
 in aspartate transcarbamylase, 295, 465
 in aspartokinase, 464
 computer analysis of, 487
 in deoxycytidylate deaminase, 306
 in enzyme complexes, 448, 449
 in glycogen synthetase, 644
 and membrane depolarization, 788
 and narcotic receptors, 825, 826
 in phosphoglyceromutase, 476
 in pyruvate carboxylase, 762
 in ribonucleotide reduction, 298, 297, 310
Amber mutations, 300, 301
D-Amino acid oxidase
 biological role of, 875, 876
 conformation of, 879
 distribution of, 875, 876
FAD of adenylate role, 879
 binding sites for, 878-880
 chemical combination with, 869
 in mechanism, 882
 and glycine oxidase, 876
mammalian
 composition of, 878
 distribution of, 875, 876
 FAD in, 878, 879
 molecular weight, 878
 role of, 875, 876
 subunits of, 878
 mechanism of hydrophobic interactions in, 881
 hypothesis of, 881-83
 intermediates in, 881, 882
 in peroxisomes, 876
 subunits of, 878
 and sulphydryl-binding agents
 enzyme titration, 879, 880
 inhibition by, 879-81
L-Amino acid oxidase
 dissociation of, 26
 FMN in, 876, 877
 mammalian, 876, 877
 in snake venom FAD in, 877
 isoenzymes of, 877
 mechanism of, 878
 subunits of, 31

- Aminoacyl transfer RNA synthetases, 369
 γ -Aminobutyric acid metabolism of, 792
 as transmitter
 in central nervous system, 790, 791, 796-98
 inhibitory, 792
 in peripheral nervous system, 790
 δ -Aminolevulinate dehydratase assay of, 940
 synthesis of, 952, 962
 δ -Aminolevulinate synthetase degradation of, 961
 localization of, 268
 in porphyria, 939, 941, 961
 synthesis of, 939, 941, 961
 AMP
 in phosphorylase activation, 641, 642
 AMP-pyrophosphorylase, 953
 α -Amylase
 association of, 42
 subunits of, 30
 synthesis, rate of, 954
 Anthranilate synthetase active complex of, 436-38
 mapping of, 438
 in *Neurospora crassa*, 437, 438
 subunits of, 31
 Antibodies
 antigen binding by
 and conformation, 899-902
 with multivalent ligands, 901, 902
 and proteolysis, 900
 with univalent ligands, 899-901
 and cellular immunity
 cell sensitization, 907, 908
 irreversible step in, 909, 910
 receptors, 908-10
 specificity of, 908, 909
 transfer of, 910
 charge upon, 903, 904
 conformation of
 and antigen binding, 899-902
 chain interactions, 895, 897
 changes in, 899-902
 in electron microscope, 897, 901, 902
 gross, 897-99
 regions of, 897-99
 formation of
 and affinity, 903, 905
 and antigenic determinants, 918, 919
 bone marrow cells in, 916, 917
 and cellular immunity, 907-10, 919, 920
 cooperation in, 918, 919
 lymphoid cell interactions
 in, 915-21
 macrophage role, 911-15
 and precursor cells, 902-7
 receptor triggering, 910-21
 specificity of, 902
 thymus cells in, 916-18
 binding of
 and conformational changes, 899
 by macrophages, 911, 912
 multivalent, 901, 902
 by precursor cells, 902-7
 and proteolysis, 900
 to receptor sites, 902, 903
 univalent, 899-901
 and cellular immunity
 cell sensitization, 907, 908
 irreversible step in, 909, 910
 receptors, 908-10
 specificity of, 908, 909
 transfer of, 910
 charge of, 903, 904
 receptors for
 and antigen affinity, 903, 905
 in cellular immunity, 907-10
 and charge, 903, 904
 on precursor cells, 902-7
 specificity of, 902, 903
 triggering of, 910-21
 Apoferritin
 association of, 42
 subunits of, 32
 Arabinose
 in glycoproteins, 600, 609, 613, 617, 618
 Arabinose binding protein, 588
 Arachidonic acid, 366
 Arachin
 hexamers from, 39
 subunits of, 32, 39
 symmetry of, 39
 Arginase
 assay of, 940
 degradation, rate of, 934, 943, 944, 958
 diet, effect of, 934, 940, 958
 and glucocorticoid, 934, 950
 synthesis, rate of, 934, 943, 944, 950, 958
 Arginine
 and adenovirus replication,

SUBJECT INDEX

- 728
carbethoxylation of, 112
condensation reactions of, 116
malonaldehyde reaction, 116
phenylglyoxal reaction, 116, 117
protecting groups for, 843, 846
- Arginine binding protein, 587, 588
- Arginine carboxylase
dissociation of, 27
subunits of, 33, 35
symmetry of, 35
- Arginine-glycine transamidinase, 949
- Argininosuccinate
levels of, 935, 945, 951, 954
- Argininosuccinate synthetase
levels of, 935, 945, 951, 954
- Aryl hydroxylase, 945, 965
- Ascites tumor cells
chromosomes of, 160, 161
mitochondria of
protein synthesis in, 272
- Asparaginase
dissociation of, 26
subunits of, 32
- Asparagine
in glycoproteins, 607-9, 612, 613, 621, 622
- Aspartate aminotransferase
dissociation of, 27
localization of, 267
subunits of, 30
- Aspartate- β -decarboxylase, 105
- Aspartate transcarbamylase
allosteric effector of, 295
as allosteric model, 465
conformation of, 57, 58
CTP binding by, 465
dissociation of, 27
levels of, 938, 944
ligand binding by, 58
subunits of
dissociation of, 27, 465
properties of, 32, 465, 466
succinate binding by, 465
from yeast, 466
- Aspartic acid
and homoserine dehydrogenase, 463
in pepsin, 117
protecting groups for, 843
- D-Aspartic acid oxidase, 877
- Aspartokinase
as bifunctional enzyme,
- 463
regulation of, 463, 464
- Aspergillus fumigatus*, 327
- Aspergillus niger*, 602
- ATP
and biotin action
in carboxylases, 757, 758, 760, 761, 763, 769
nucleotide specificity, 763
- chloroplast penetration by, 412, 417
compartmentation of, 475, 476
- in CTP synthesis, 294
- in diphosphoinositide formation, 370
- glyceraldehyde phosphate dehydrogenase
dissociation of, 27
- and glycogen synthetase, 645
- and homoserine dehydrogenase, 463
- in lactose transport, 579
- in nucleotide kinase reactions, 293, 294
- and ONPG uptake, 579
- in phospholipid biosynthesis, 362, 364, 372
- and phosphorylase activation, 643
- in pyruvate dehydrogenase regulation, 446
- in sugar phosphorylation, 654, 655
- synthesis of
acid-base transition driven, 391, 392
in photosynthesis, 390-93, 401, 402
- in undecaprenol phosphorylation, 376
- ATPase
activation of, 273, 393
in calcium transport, 592, 593
- in chloroplasts
properties of, 392, 393
- lipoprotein, 591, 592
- localization of, 267, 273
- in membranes, 267, 273, 280
- in mitochondria, 371, 372
- in potassium transport, 590, 591
- ratamycin effect, 273
- in sodium transport, 590, 591
- Autoradiography
and antigen uptake, 905, 908
- of chromosomes, 163
- of DNA, 159
- Avian leukemia viruses
discovery of, 737
- properties of, 738
replication of, 738, 739
- Avian myeloblastosis virus
composition of, 739
purification of, 739
replication of, 741
RNA of, 740, 744-46
- Avian sarcoma viruses
discovery of, 737
properties of, 738
replication of, 738, 739
- Avidin
biotin binding by
analog, 771
dissociation constant of, 771
measurement of, 772
and quaternary structure, 772
tryptophan role, 772
carbohydrate of, 605, 610, 612
- and carboxylase action
allosteric effects, 762
complex formed, 773
exchange reactions, 758
- levels of, 941
- and streptavidin, 772
- structure of
biotin sites in, 771, 772
and streptavidin, 772
- subunits, 30, 771
- Azobenzene-2-sulfenylbromide, 105
- Azotobacter vinelandii
cytochromes of, 676, 690, 691
phospholipids of, 336
RNA polymerase of, 460
- B
- Bacillus cereus*, 244
- Bacillus megaterium*
cytochromes of, 682
- glucosaminyl phosphatidyl-glycerol in, 346
- phospholipid biosynthesis in, 362
- phospholipids of, 336
- Bacillus natto*, 373
- Bacillus stearothermophilis*
nucleotide sequences in, 244
- phospholipid metabolism in, 373
- Bacillus subtilis*
cytochrome a of, 677
- DNA replication in, 162, 163
- membranes of
and barrier properties, 573
- leakage of, 573

- transport in, 569, 572, 573, 577
 mesosome in, 162, 163
 phospholipid metabolism in, 373
 phospholipids of, 336
 ribonuclease of, 239
 RNA of
 biosynthesis of, 210, 211
 composition of, 187
 genes for, 213, 214
 nucleotide sequences in, 244
 5S, 210, 211
 transport in, 569, 572, 573, 577
 Bacteriophage β , 529, 530
 Bacteriophage f2
 coat protein of
 structure of, 533, 537
 synthesis of, 538
 properties of, 529
 RNA of
 nucleotide sequences of, 233, 234, 240, 242, 245, 531
 properties of, 530
 translation of, 538
 RNA polymerase of, 536, 537
 serological group of, 528
 Bacteriophage f_{can}, 529
 Bacteriophage fd, 245
 Bacteriophage FHS, 528, 529
 Bacteriophage fr
 properties of, 529
 RNA of, 530
 serological group of, 528
 Bacteriophage λ
 defective particles of, 706
 DNA of
 denaturation mapping of, 707
 hybridization of, 140
 Bacteriophage M12
 coat protein of, 533
 nucleotide sequences in, 245
 properties of, 529
 serological groups of, 528
 Bacteriophage MS2
 assembly of, 548, 549
 coat protein of, 533
 properties of, 529
 protein synthesis in, 540
 RNA of
 in mutants, 234, 235
 nucleotide sequences of, 233, 237, 238, 245, 531
 properties of, 530
 terminal triphosphate in, 233
 serological group of, 528
 Bacteriophage μ 2, 529, 530
 Bacteriophage Q_B
 assembly of, 549, 550
 properties of, 529
 replication of
 replicative complex of, 546, 547
 RNA of, 543-48
 RNA of
 nucleotide sequences of, 233, 234, 237-39, 242, 243, 245, 531
 properties of, 530
 synthesis of, 543-48
 terminal triphosphate in, 233
 RNA replicate of, 459
 serological group of, 528
 Bacteriophage R17
 assembly of, 549, 550
 coat protein of, 533
 properties of, 529
 RNA of
 fragments of, 232, 245
 in mutant phage, 235
 nucleotide sequences of, 232, 237, 240, 245, 531
 properties of, 530
 ribosome binding of, 240
 terminal triphosphate in, 233
 serological group of, 528
 Bacteriophage T₂
 DNA of, 171
 nucleases induced by
 DNA polymerase association, 315
 nature of, 314
 and pyrimidine nucleotide metabolism
 deoxy CMP deaminase in, 306
 dihydrofolate reductase activity, 305, 306
 early proteins, 300
 pathway of, 293
 Bacteriophage T₄, 713
 Barbituates
 mechanism of action of, 797, 798
 withdrawal from, 798
 Basement membrane
 biosynthesis of, 622
 carbohydrate of, 603, 604, 608, 609, 612, 613, 617, 618, 629
 function of, 629
 Behavior, model of
 and environmental response in development, 812, 813
 forms of, 784
 habituation in, 785, 786
 learning in, 781, 785
 receptor activation, 779, 781, 784, 785
 in equilibrium state as aim, 779, 780
 and environment, 779, 780, 782
 monitoring of, 780, 784, 785
 Bile acids
 metabolism of, 622
 Biotinylation
 of proteins, 622
 Biotinylation of proteins
 and DNA degradation, 622
 bacterial nucleases in, 313, 314
 genetic aspects, 313
 molecular weight, 310, 311
 nucleases induced, 314-16
 nuclease specificity in, 311
 stages in, 311, 312
 nonlethal mutants of, 307, 308
 nucleases induced by

SUBJECT INDEX

- hippocampus, role in, 784
 hypothalamus, role in, 782, 783
 levels of, 778, 779
 neurons in
 membranes of, 787-89
 sensitivity of, 797, 798
 structure of, 787, 788
 receptors in
 activation of, 781, 784, 785
 and chemotaxis, 787
 and habituation, 785, 786
 and information processing, 782-84
 and neuroendocrine system, 782-84
 structures of, 786, 787
 and taste, 786, 787
 types of, 780, 781
 visual pigments, 786, 787
 summary of, 811-14
 synapses in
 and connectivities, 799-811
 cross-regulation in, 796, 797
 events in transmission, 792-96, 802, 803
 hypertrophy of, 799, 800
 membranes of, 797, 798
 metabolic activation, 803-7
 nature of, 789-92
 physiological events in, 800-4
 time relationships in, 800-11
 transmitters, 789-98, 802, 803
- Benzoylated DEAE-cellulose, 229, 230
- Biotin
 carbon dioxide intermediate of
 and carboxyl transfer, 764-66
 enthalpy of hydrolysis of, 758, 763, 769
 formation of, 758, 763, 764
 isolation of, 758
 protein linkage of, 760, 761
 and protein structure, 760-63
 stability of, 758, 763, 768, 769
 structure of, 758, 759, 761, 765
 in carboxylase reactions
 enzymes of, 757, 759
- and enzyme structure, 762, 763
 mechanism of, 757, 758, 760
 and oligomeric structure, 762
 reactions of, 757, 758
 subunit role, 760-63
 carboxylation of
 with analogs, 771
 ATP role, 763
 carbon dioxide species, 763, 764
 mechanism of, 764, 765
 and carboxyl transfer
 mechanism of, 764, 773
 metal ion role, 764-66, 773
 model studies, 769, 770
 configuration of, 758
 decarboxylation of
 energy considerations, 758, 763, 769
 mechanism of, 768, 769
 pH effect, 768
 model studies of
 with analogs, 771
 carboxyl transfer, 769, 770
 decarboxylation, 768, 769
 sulfur role, 770, 771
 reaction sites for
 in carboxylation, 763, 764
 in carboxyl transfers, 764-66
 kinetic evidence, 766, 767
 sulfur role in, 770, 771
 in transcarboxylase reactions
 enzyme of, 759
 mechanism of, 757, 758, 760, 766, 767
 reactions of, 758
 subunit role, 761
- Biotinidase, 760
- Biphenyloxypropoxycarbonyl, 848
- Blood
 acid-base balance of, 6-8
 calcium of, 14-18
 electrolytes of, 5
 oxygenation of, 4, 5
 red blood cells of, 5
- Blood glucose
 control of
 and compartmentation, 478
 and diabetes, 478
 hormone role, 478
 models of, 478
- Bone
 calcium of, 15, 16
 X-ray diffraction of, 16
- Bromegrass mosaic virus, 33
- N-Bromosuccinimide
 sulphydryl oxidation by, 103
 and tryptophan oxidation, 772
 and TSH releasing factor, 507
- Brucella sp., 329, 333, 337
- Burkitt's lymphoma, 736, 737
- Bushy stunt virus, 33
- C**
- Calciferol, 965
- Calcification
 and collagen, 18
 and plasma calcium, 15-17
 and plasma proteins, 16, 17
- Calcitonin
 biological activity of, 847, 850
- chemical synthesis
 coupling in, 849, 850
 deblocking in, 843, 848-50
 protecting groups in, 843, 848-50
 strategy of, 848
 sequences of, 847
 and serum calcium, 18
- Calcium
 binding protein for, 591, 592
 and glycogen synthetase, 646
 and morphine action, 828
 phosphorylase kinase, effect on, 642, 643
 in plasma
 and calcification, 15-17
 after parathyroid removal, 14
 and protein concentration, 16, 17
 transport of, 591-93
- Cancer
 see Oncogenesis
- Candida sp.
 fatty acids of, 330
 ribosomes of, 261
- Carbamoylphosphate synthetase, 466, 468
- Carbamyl phosphate synthetase
 inactivation of, 944
 regulation of, 941
- Carbonic anhydrase
 alkylation of, 111
 nitration of, 119
 in photosynthesis, 404
- Carboxydismutase, 32
- Carboxylases

- reactions of, 757-59, 763-66
 sources of, 759
 structure of
 and activity, 762, 763
 avidin complex of, 773
 metal ion in, 764-66,
 773
 oligomeric, 762
 subunits in, 760-62
 substrates for, 758, 759
 subunits of
 biotin in, 760-62
 separation of, 760
 and transcarboxylation,
 758
- Carboxylesterase**, 31
- Carboxyl groups**
 modification of, 117,
 118
- Carboxypeptidase**
 active site of, 117
 carboxyl groups of, 117
 catalysis by
 esterase activity, 82,
 83
 mechanism of, 72, 77,
 79-83
 properties of, 77
 strained enzyme mechanism
 in, 72, 77, 79, 80, 82,
 83
 substrate binding, 77-
 82
 zinc role in, 77-79, 82,
 83
 esterase activity of, 82,
 83
 nitration of, 77, 118, 119
 structure of
 at active site, 70, 74, 77-
 79, 81, 95
 of glycyl-tyrosine complex,
 79, 80
 and substrate binding, 77-
 81
 at zinc atom, 72, 77,
 78
- X-ray diffraction of
 and catalytic mechanism,
 72, 77-83
 and sequence determination,
 64, 65, 77, 78
 and structure, 65, 77-82
- Cardiolipin**, 336, 337
- Casein**, 941
- Catalase**
 assay of, 940
 degradation of, 947, 953,
 962, 963
 mutants of, 952, 953,
 964
 peroxides binding by, 485
 in photospiration, 419
 subunits of, 31
 synthesis, rate of, 943, 947,
 959
- Caulobacter**, 529
- CDP-choline**, 367
- CDP-diglyceride**
 in phospholipid biosynthesis,
 362, 369, 370
- CDP-ethanolamine**, 368
- CDP reductase**, 710
- Ceramide ciliatine**, 344
- Cerebrosides**, 348
- Ceruloplasmin**, 31
- Chemotaxis**
 cyclic AMP in, 787
 and transport, 590
- Chloramphenicol**
 action of, 311, 312
 in DNA degradation, 311,
 312
 inhibition of protein synthesis by, 271
 mitochondrial effect of,
 271
 and ribosome formation,
 196, 199
- Chlorella vulgaris**, 330,
 374
- Chlorocruorin**
 subunits of, 33, 37
 symmetry of, 37
- p-Chloromercuribenzoate,
 27, 103, 106
- Chloroplasts**
 absorbancy changes in,
 398
- ATPase of, 392, 393
- ATPase synthesis in
 acid-base transition driven,
 391, 392
 photophosphorylation, 390-
 93, 401, 402
- ATP penetration of, 412
- carbon dioxide uptake by
 demonstration of,
 410
 envelope role, 414, 415
 induction phenomena, 412,
 413
 orthophosphate inhibition,
 413, 414
 and oxygen evolution, 411,
 412, 414
 rate of, 411
 and sucrose synthesis, 415,
 416
- Warburg effect, 416
- carbon path in
 Benson-Calvin cycle, 403,
 404
- carbon dioxide in, 403,
 404, 410
- HSK pathway, 404-10
- multienzyme system in,
 403
- phosphoenolpyruvate carboxylase role, 404, 405
 and photorespiration, 408,
 409
- pyruvate phosphate dikinase
 role, 404-6, 409
- ribulose diphosphate role,
 403, 405
- compartments of, 482
- DNA in
 detection of, 253
 hybridization of, 146
- energy path in
 coupling sites, 390,
 391
 dissipation reactions, 390,
 391
 and H⁺ uptake, 393, 396-
 401
- in nonphosphorylating conditions, 390
- stoichiometric relations,
 390, 391, 400, 401
- H⁺ uptake by
 antibiotic effect, 394-
 98
 and chloride uptake, 394
 and electron flow, 400,
 401
- energy potential of, 399
 gradient produced, 394,
 396-99
- light induced, 393
- mechanism of, 402, 403
 and phosphorylation, 401,
 402
- and potassium efflux,
 396
- ion movements in
 and absorbancy changes,
 398, 399
- antibiotic effect, 394-
 97
- chloride, 394
 and electron flow, 400,
 401
- H⁺ gradient, 394, 396-
 99
- H⁺ uptake, 393, 394, 396-
 403
- phosphates, 413, 414,
 417
- stoichiometry of, 396, 400,
 401
- and subchloroplast particles,
 397
- membrane of
 antibiotic effect, 394,
 396
- ATP permeability of, 412,
 417
- and chloride uptake, 394
 and electron flow, 391
 and H⁺ uptake, 394, 396-
 403
- oxygen evolution by
 and carbon dioxide uptake,
 411, 413, 414
- demonstration of, 410
- oxidant role, 411, 412
- phosphate role, 414
- pH in, 399

SUBJECT INDEX

- photophosphorylation in determination of, 390, 391
equilibrium of reaction, 391
and H⁺ uptake, 401, 402
reversibility of, 392, 393
stoichiometry of, 390, 391
uncoupling of, 396, 397
polypropenols in, 327
ribosomes in demonstration of, 260 sedimentation coefficient of, 185 structure of, 406
Chlorpromazine, 835
Cholesterol, 280, 338
Cholinesterase inactivation of, 947 and narcotic drugs, 835
Chorionic gonadotrophin, 603-5, 628
Chorismate mutase, 441
Chorismate synthetase, 441
Chromatin composition of, 154, 156, 157 metabolic activity of, 164 protein of, 156-58, 169 structure of dissociation of, 174 DNA in, 161 fiber, 161 titration of, 158 transcription of control of, 166, 167, 173-75 models of, 163, 164
Chromosomes autoradiography of, 163 circular dichroism of, 159 composition of and chromatin, 154 histone, 157 and isolation, 152-55 protein, 155-57 and ribosomes, 154, 155 table, 156 DNA replication in rate of, 162 semiconservative, 159 unit of, 162 electronmicroscopy of, 160 eukaryotic and bacterial chromosomes, 151 and cell division, 151 composition of, 152-58 DNA molecules in, 159
- DNA replication in, 162 gene clustering in, 165, 166 isolation of, 152, 155, 156 linkers in, 159, 162 metaphase, 151, 152 ribosomes in, 154, 155 RNA of, 154-56 structure of, 151, 152, 160-62 transcription of, 163-76 isolation of and cell disruption, 152, 153 and composition, 153, 154, 156 fractionation, 157 methods of, 152-54 and protein, 154 purity, 155, 158 magnesium effect, 158-60 metabolic activity of, 164 metaphase composition of, 152-58 DNA of, 159, 160 histones of, 157, 169, 172 isolation of, 152, 155, 156 magnesium binding of, 158, 159 RNA of, 152, 154-56 size groups of, 151, 157 stability of, 160 structure of, 152, 155, 160-62 titration of, 158 structure of DNA molecules of, 159, 160 fiber of, 152, 160, 169 folding, 169 and isolation, 152-56 in mitosis, 164 order in, 152 puffing, 168 and RNA content, 155 size classes, 151, 157 stability of, 160 and transcription, 166-68 titration of, 158 transcription of coarse control of, 166-73 fine control of, 173-76 histone role, 167-73 membrane role, 162-64 models of control, 173-76 position effects, 168 and structure of, 166-69 units of, 162
- and transformation, 730, 731 X-ray diffraction of, 161 Chymotrypsin activation of, 83, 84 active site of, 85, 117, 122, 123 antibody hydrolysis by, 900 autoproteolytic products of formation of, 83, 84 X-ray crystallography of, 69 carboxyl groups of, 117 catalysis by and active site, 84-87, 95 entropic effects in, 71 mechanism of, 84, 85, 87 specificity of, 83, 85 strain effects, 72, 73 zinc role in, 72 disulfide bridges in, 69 formation of, 83, 84 hydrophobic regions in, 69, 85 iodination of, 119 methionine in, 121 nitration of, 119 specificity of, 83, 85 structure of at active site, 84-87, 95 disulfides in, 69 hydrophobic regions, 69, 85 and substrate binding, 74, 84, 85, 87 tertiary structure of, 117, 122 X-ray diffraction of and active site, 84, 85, 87 disulfide bridges in, 69 of enzyme forms, 87 hydrophobic regions, 69, 85 resolution of, 65 Chymotrypsinogen association of, 41, 42 nitration of, 119 structure of, 84, 117 synthesis, rate of, 954 X-ray diffraction of, 84 Circular dichroism of D-amino acid oxidase, 881 of chromosomes, 159 of cytochrome c₂, 692, 693 of flavoenzymes, 886 of globin, 998 of hemoglobin, 995 of immunoglobulins, 895, 899, 900 of lipoamide dehydrogenase,

- 874
 of xanthine oxidase, 883
 Citraconic anhydride, 114
 Citrate cleaving enzyme, 937, 954
 Citrate condensing enzyme, 267
 Citrate synthetase, 480
 Colicine E₂, 551
 Collagen
 biosynthesis of, 622
 and calcification, 18
 carbohydrate of, 603, 606-9, 611-13, 615-17, 622
 distribution of, 631
 nitration of, 119
 Collagen glucosyl transferase, 722
 Compartmentation
 in chloroplasts, 482
 definition of, 493
 and glycolysis regulation, 475, 476
 in Krebs cycle, 480, 481
 due to spatial inhomogeneity, 481
 Complementation, 435
 Computers
 in biochemical kinetics
 blood glucose control, 478
 glycolysis, 475-78
 history, 474
 in Krebs cycle, 480, 481
 in mitochondria, 479, 480
 programs, 474, 475
 of protein synthesis, 481, 483, 484
 and biochemical oscillations
 in glycolysis, 485, 486
 with negative feedback, 486
 in enzyme kinetics
 optimization techniques, 491
 rate constant determination, 486
 and steady-state approximation, 486, 487, 489
 in equilibrium studies, 483
 glossary of terms, 493-94
 and logical models, 487
 matrix methods in, 489, 490, 493
 Monte Carlo methods in, 490, 491
 optimization techniques
 in enzyme kinetics, 491, 492
 hemoglobin oxygenation, 482
 and insulin aggregation,
- 482
 limitations of, 482
 and mitochondria, 479
 nature of, 474, 481, 482, 494
 programs for, 475, 488, 491, 492
 and steady-state data, 491
 programs for
 compartmentation studies, 475, 488
 equilibrium approach, 492
 generator, 475, 488
 Monte Carlo methods, 490, 491
 optimization, 475, 488, 491, 492
 rate law derivation, 489, 490
 simulation, 474, 475, 488
 rate law methods in, 489, 490, 493
 simulation techniques
 of blood glucose control, 478
 definition of, 473, 474
 of glycolysis, 475-78, 485, 486
 history, 474
 Krebs cycle, 480, 481
 limitations of, 481
 of mitochondria, 479, 480
 programs for, 474, 475, 488
 of protein synthesis, 481, 483, 484
 and stiff differential equations, 489, 494
 in teaching, 492, 493
 theorems derived from
 in enzyme kinetics, 485
 for steady state, 485
 types of, 488, 489
 Concanavalin, 30
 Corticotropin
 see ACTH
 Counter-current distribution, 229
 Creatine biosynthesis, 959, 960
 Creatine kinase
 hybridization of, 28
 iodine, oxidation of, 102
 subunits of, 30
 Crossover theorem
 computer study of, 485
 definition of, 493
 α -Crystallin, 33
 CTP
 and aspartate transcarbamylase, 465
 biosynthesis of
 amino donors for, 294,
- 295
 control of, 295
 guanine nucleotide role in, 294, 295
 pathway of, 293, 294
 as CDP-diglyceride precursor, 362
 CTP synthetase, 295
 Cucumber mosaic virus, 33
 Cyclazocine, 822, 823
 Cyclic AMP
 ACTH effect, 647, 648
 as chemotactic agent, 787
 epinephrine effect, 647-50
 glucagon effect, 650, 651
 and glucose transport, 663
 glyceraldehyde phosphate dehydrogenase
 dissociation of, 27
 and glycogen metabolism, 642, 645, 657, 658
 and glycogen synthetase, 645
 and glycolysis, 806
 and histone phosphorylation, 967
 and hypothalamic releasing factors, 522
 insulin effect, 651, 652
 in phosphorylase activation, 642, 651
 and protein synthesis, 956
 regulatory role of, 806, 807
 and serine dehydratase levels, 958, 959
 Cycloheximide
 and enzyme degradation, 946
 inhibition of protein synthesis by, 271
 mitochondrial effect of, 271, 279
 Cystathione γ -synthetase
 as enzyme complex, 463
 subunits of, 31
 Cysteine
 biosynthesis of, 462
 in cytochrome c₃, 694, 695
 oxidation of
 with iodine, 102
 upon nitration, 119
 photochemical, 110
 protecting groups for, 843
 in proteins, reactions
 alkylation, 107, 110
 with arylsulfenyl halides, 105
 blocking of, 106, 107, 843

SUBJECT INDEX

- with N-bromosuccinimide, 103
carbethoxylation, 112
disulfide formation, 104, 105
with 5, 5-dithiobis(2-nitrobenzoate), 103, 104
with 4, 4'-dithiopyridine, 104
with maleimides, 107, 108
with mercurials, 105, 106
oxidation of, 102, 103, 110
with tetrinitromethane, 103
- Cysteine synthetase as protein complex, 462, 463
subunits of, 32
- Cytochrome a classification of and cytochrome a_1 , 675 and cytochrome a_3 , 675, 676 by spectral properties, 675, 676 definition of, 675 demonstration of, 676 preparation of, 675 spectra of carbon monoxide effect, 675, 676 and classification, 675, 676 cyanide effect, 675, 676 in *Thiobacillus*, 677
- Cytochrome b classification of, 678, 679 conversion of, to cytochromes c, 678, 679 degradation of, 960, 961 of *E. coli*, 680, 682 in nitrate reductase complex, 457 occurrence of, 679, 680, 682 in photosynthetic bacteria, 680-82 properties of, 682 prosthetic group of, 679, 680, 682 spectral properties of, 679, 682 structure of, 682
- Cytochrome b_5 reductase, 115
- Cytochrome c acetylation of, 115 circular dichroism of, 692 classification of, 689 definition of, 674, 675, 688 distribution of, 688-90 extraction of, 692 formation of, from cytochromes b, 678, 679 functions of, 674, 691 iodine oxidation of, 102 nitration of, 119 oxidation of by bacterial cytochromes, 676, 677 and configuration, 693 in *Pseudomonas*, 678 in photosynthesis, 674 quantity of, in bacteria, 690 site of synthesis, 271 spectra of, 689 structure of in *Azotobacter*, 690, 691 and circular dichroism, 692, 693 cysteine in, 694, 695 and electron spin resonance, 692 and evolution, 693, 694 and Mössbauer measurements, 692 and optical rotatory dispersion, 693 oxidation effect, 693 and phylogenetic relationships, 693, 694 sequence data, 691, 693 variations in, 688 by X-ray diffraction, 694
- Cytochrome c reductase degradation of, 960, 961 lipid requirement of, 377 phenobarbital, effect on, 938, 960, 961 synthesis of, 938, 948, 960
- Cytochrome d autoxidation of, 677, 678 as cytochrome a_2 , 677 in cytochrome oxidase, 678 distribution of, 677, 678 in *Pseudomonas*, 678
- Cytochrome e carbon monoxide binding of, 682, 684, 685 as cytochrome c' , 686 detection of, 682 function of, 682, 686 properties of, 686 spectrum of, 682
- Cytochrome oxidase activation of, 272 localization of, 267 mitochondrial mutants in, 253 synthesis of, 272, 273 in *Pseudomonas*, 675, 678 synthesis of, 272, 273 in *Thiobacillus*, 677
- Cytochrome P-450 phenobarbital effect on, 938, 960 properties of, 686-88 structure of, 687
- Cytochromes bacterial cytochromes a, 675-77 cytochromes b, 678-82 cytochromes c, 688-95 cytochromes d, 677, 678 cytochromes o, 682, 686 P-450 protein, 686-88 and computer models, 479, 480 functions of, 674 history of, 674 synthesis of, 271 variants of, 674, 675 see also specific cytochromes
- D
- DAHP synthetase, 441 DEAE-sephadex and oligonucleotide fractionation, 231 and transfer RNA fractionation, 229 Debranching enzyme, 647 Dehydrogenases, 267, 268 5-Dehydroquinase, 439, 440 5-Dehydroquinate synthetase, 439, 440 5-Dehydroshikimate reductase, 439, 440 Deoxycytidine kinase, 710 Deoxycytidine triphosphatase bacteriophage induced, 301-4 function of, 303, 304 genetic aspects, 303, 304 Deoxycytidylate deaminase bacteriophage induced, 306, 308 control of, 306 induction of, 710, 743 role in pyrimidine metabolism, 298-300 Deoxycytidylate hydroxymethylase bacteriophage induced genetics of, 302, 303 purification of, 305 reaction of, 302 synthesis of, 302 Deoxyribonuclease alkylation of, 111 carbohydrate of, 602, 603, 605, 611, 612 disulfides in, 109 localization of, 268

- Deoxythymidine diphosphate kinase, 710
 Deoxythymidylate kinase, 710
 Deoxythymidylate synthetase, 710
 Deoxyuridine triphosphatase bacterial, 305
 bacteriophage induced, 301, 302
 properties of, 297, 298
 Deoxyuridine triphosphate, 293, 297, 298
 Diabetes, 8
 Diacyl phosphatides, 340, 341
 Dianemycin, 395, 396, 398
 Diborane, 118
 1, 3-Dibromoacetone, 106
 Diethylpyrocarbonate, 112
 Diethylstilbestrol, 266
 Diethylthiocarbamate, 834
 Difference Fourier studies, 66, 67
 Digitonin, 266
 Dihydrofolate reductase bacteriophage induced, 305, 306, 310
 induction of, 710
 iodine oxidation of, 102
 properties of, 305, 306
 in thymidylate synthesis, 297
 Dihydrolipoyl dehydrogenase as flavoprotein, 442, 443
 function of, 442, 443
 reconstitution of, 443, 444
 Dihydrolipoyl transacetylase in enzyme complex, 442-47
 genetics of, 442
 Dihydrolipoyl transsuccinylase, 442, 446
 Dihydroorotate, 938
 Dihydroorotic dehydrogenase, 883
 Dihydroxyacetone phosphate, 361
 Dilospropylfluorophosphate, 123
 2, 4-Dinitrophenol, 168
 Diol ethers, 335
 Diplococcus pneumoniae, 602
 Disulfide links in proteins formation of, 103-5
 reduction of, 108, 109
 and stability, 108, 109
 5, 5-Dithiobis (2-nitrobenzoate), 103, 104
 DNA biosynthesis of in bacteriophage infected cells, 304, 312, 550
 glucosylation, 304
 inhibition of, 298
 in chromatids, 159
 in chromatin, 161
 in chromosomes histone ratio, 157
 linkers in, 159, 162
 number of molecules, 159
 redundancy in, 177, 178
 replication of, 162
 cytoplasmic, 252, 253
 degradation of in bacteriophage infection, 303, 304, 306, 310-16
 nucleases of, 313-16
 nuclelease specificity in, 311
 stages in, 310-12
 denaturation mapping of, 707
 in eukaryotes gene clustering in, 165, 166
 hybridization of, 141-46
 linkers in, 159, 162
 membrane attachment of, 163, 164
 number of molecules, 159
 proteins associated with, 151, 157
 redundancy in, 142, 143, 177, 178
 renaturation of, 146
 replication of, 162, 163
 satellite, 157
 histone binding of, 170, 171
 hybridization of bacterial, 140
 chain length, effect, 133, 135
 complexity, effect of, 137
 eukaryotic, 141-46
 free ends, effect of, 136
 locus specificity of, 139
 in organic solvents, 138, 139
 reaction conditions, 136-39
 and redundancy, 142, 143
 unpaired base effect, 135
 viral, 139, 140, 706, 707
 in mitochondria buoyant density of, 253-55, 275
 catenane form, 253
 circularity of, 253-55
 coding properties of, 257, 274
 evolution of, 252, 280
 function of, 274, 275, 810
 homogeneity of, 252, 253, 255
 molecules per mitochondrion, 253, 255
 mutations in, 252, 275, 277
 replication of, 252, 256, 257
 size of, 252, 253, 255, 256
 nontranscribed, 177, 178
 redundancy in, 177, 178
 renaturation of, 146
 replication of and cell transformation, 718, 719, 741-43
 control of, 163
 membrane attachment, 162, 163
 termination of, 163
 satellite, 157
 and transcription arabinose operon, 165
 histone effect, 170-76
 lactose operon, 165
 position effects, 168
 structure role, 166-69
 transfer RNA role, 165
 viral adenovirus, 723-25, 728-31
 polyoma, 706, 707, 712-14
 SV40, 708, 707, 712-14
 DNA polymerase bacteriophage induced, 309
 deoxy UTP as substrate for, 298
 induction of, 710, 712, 721, 729, 730
 in mitochondria, 256, 257
 nuclease associated with, 315
 Dopamine, 833-35
 Dopamine- β -hydroxylase, 834
 Down's syndrome, 715
 DPN see NAD
Drosophila melanogaster chromosomes of, 152
 RNA of biosynthesis of, 216
 composition of, 187
 genes for, 213-16

E

- Ehrlich ascites cells, 630
 Elastase nitration of, 119
 structure of, 65, 88
 Electrophoresis, 584
 Electronmicroscopy

SUBJECT INDEX

- of adenovirus DNA, 724
 of antigen-antibody complexes, 901, 902
 of bacteriophage, 549
 of chloroplasts, 415
 of chromosomes, 160
 of DNA
 and DNA degradation, 311, 312
 from mitochondria, 253, 256
 polyoma virus, 712
 of fatty acid synthetase, 449
 of hybridized DNA, 139
 of immunoglobulins, 897, 901, 902
 in Lucké carcinoma, 735
 of mitochondria, 260
 on nucleolar ribosomal RNA, 201
 and protein symmetry, 35-37
 of pyruvate carboxylase, 762
 of pyruvate dehydrogenase, 444
 of synapses, 790
 Electron paramagnetic resonance, 55, 991, 992
 Electron spin resonance of cytochrome c, 692
 of flavoenzymes, 888
 of P-450 heme protein, 687
 Electron transport enzymes of, 267
 in membranes, 336
 models of, 479, 480
 reconstitution of, 282
 Enolase
 metabolic flow-through, 477
 methionine in, 121
 subunits of, 30
 3-Enopyruvylshikimate phosphate synthetase, 439, 440
 Enzyme catalysis
 requirements of, 70, 71
 specificity in
 and induced fit, 73, 74
 lock and key hypothesis, 73
 strain, 73, 74
 strain effects in electronic, 72
 and folding, 73
 in lysozyme, 71, 72
 rigid enzyme mechanism, 71, 72
 types of, 71
 Enzymes
 chemical modification of, 359-83
 degradation of and conformation, 968
 enzymes in, 969
 lysosome role, 969
 measurement of, 943, 946
 rates of, 942, 943
 regulation of, 967-69
 lipid-dependent, 377, 378
 quaternary structure of, 359-83
 regulation of level of and amino acid availability, 967
 in cell culture, 940, 944, 945, 954-56
 at cell level, 947, 950
 degradation rates in, 942, 943, 967-69
 in development, 948, 949, 955, 965, 966
 by diet, 958-60
 and drugs, 960, 961
 and gene duplication, 986
 genetic aspects, 962-64
 histone role, 966, 967
 by hormones, 955-58, 965
 in intact animals, 954 and messenger RNA stability, 967
 and metabolic flux, 951
 in mutants, 952, 953, 955, 962-64
 organ specificity of, 950
 in organ systems, 941, 954
 and ribosomes, 967
 specificity of, 947, 950
 synthesis rates in, 942, 943
 and time course measurements, 946, 947
 synthesis of in animal cells, 964-67
 and histones, 966, 967
 inhibition of, 942, 946
 measurement of, 942, 943, 946, 947
 rates of, 942, 943
 regulation of, 964-67
 see also Proteins, Protein synthesis, and specific enzymes
 Eosomes, 195, 196
 Epinephrine and cyclic AMP, 647-50
 and glycogen metabolism, 647-49
 and phosphorylase kinase, 648, 649
 and prolactin release, 521
 secretion of, 782
 and sugar transport, 664
 and tryosine transaminase induction, 794
 Epstein-Barr virus, 736, 737
 Erythrocrorulin, 32, 35, 37
 Erythrocytes computer study of, 483
 glycolysis in, 477
 membranes of, 363
 sugar transport in, 477
 Escherichia coli
 acetyl-coenzyme A carboxylase of, 759-62
 alkaline phosphatase of, 590
 arabinose binding protein of, 588
 arginine binding protein of, 587, 588
 aspartate transcarbamylase of, 465, 466
 aspartokinase I of, 463, 464
 bacteriophage infection of adsorption, 534, 535
 DNA metabolism in, 293, 300-6, 309-16
 as model system, 528
 multienzyme complexes in, 309
 nucleases in, 304, 305
 penetration, 534, 535
 steps in, 528
 chemotaxis in, 590
 chorismate synthesis in, 441
 colicin effect on, 380
 computer model of, 484
 cytochromes in, 677, 680, 682
 DNA of
 hybridization of, 141
 replication of, 162, 163
 fatty acid synthesis in, 450-53
 galactose binding protein of, 587
 β -galactosidase of, 602
 homoserine dehydrogenase I of, 463, 464
 α -ket acid dehydrogenases of, 442-45
 lactose uptake in, 577-80
 leucine binding protein of, 585-87
 lipoamide dehydrogenase of, 873, 874
 membranes of, 569, 571-74
 mesosome in, 163
 methionyl-transfer RNA synthetase of, 114
 nitrate reductase in, 457, 458

- nucleases of, 237, 238, 313-16
osmotic shock of
and amino acid uptake, 585, 586
effects of, 582, 583
and protein release, 582
pericytoplasmic proteins of, 582
phosphatidylglycerol in, 369
phospholipid role in, 374
phospholipid synthesis in, 362, 373, 374
phosphorylase of, 641
protein synthesis in, 460-62
pyrimidine nucleotide synthesis in, 292-316
ribonuclease IV of, 237, 238
ribosomal RNA of
biosynthesis of, 195-200, 211
genes for, 214
homogeneity of, 217
as messenger, 199, 200
methylated nucleotides in, 188, 189, 191
pseudouridylic acid in, 187, 188, 191, 58, 209-11
sequence analysis of, 190, 191
5S RNA of
purification of, 230
sequence analysis of, 232, 236, 239, 240
thioredoxin of, 871
thioredoxin reductase of, 871-73
transfer RNA of, 236, 244
transport in
of amino acids, 585-87
genetic studies of, 566, 567
of glycerol, 581
by membranes, 569, 571, 572
phosphoenolpyruvate role, 562, 563, 569
phosphotransferase role, 562-74, 577
regulation of, 574, 575
of sugars, 562, 563, 566, 567, 569, 570, 577-81
temperature effect, 572, 573
tryptophan synthetase of
ammonium ion effect, 431
complementation studies, 434, 435
conformational changes in, 432
genetic studies of, 435-37
mutants of, 431, 432, 434, 435
reactions of, 431, 432, 434
 α subunit of, 431-36
 β_2 subunit of, 431, 433-36
Estradiol, 965
N-Ethylmaleimide
and lactose transport, 578
and protein dissociation, 27
Etorphine, 826
Euglena gracilis, 254
- F
- Fabry's disease, 348, 349, 627
FAD
in D-amino acid oxidase, 869, 878-80, 882
in L-amino acid oxidase, 877
in D-aspartic acid oxidase, 877
in glutathione reductase, 875
of lipoamide dehydrogenase, 874
and nitrate reductase, 458
in thioredoxin reductase, 872, 873
Fanconi's anemia, 715
Farnesyl pyrophosphate, 376
Fatigue, 3
Fatty acids
analysis of, 332
in bacteria, 328-30
composition of, 328-32
corynomycolic acid, 329
in fungi, 330
incorporation into phosphatidic acid, 359-61
in insects, 331
 α -mycolic acids, 329
in phospholipids, 359, 360
in plants, 330, 331
synthesis of
and carbon dioxide concentration, 10
and fatty acid synthetase, 449-56, 937
ion effect on, 13
phospholipid stimulation of, 379
in vertebrates, 331, 332
Fatty acid synthetase
acyl carrier protein in, 450-56
in animals, 455, 456
- in E. coli, 450-54
enzymes of, 449
levels of, 937
mechanism of action of
in animals, 455, 456
in E. coli, 450-54
evidence for, 452
reaction sequence, 449-52
sulfhydryl groups in, 449-55
in yeast, 449-55
reconstitution of, 455, 456
structure of, 449
subunits of, 32
sulfhydryl groups in, 449
in yeast, 449-55
Ferrodoxins, 870, 871
Ferraheme, 119
Ferritin, 939, 940, 942, 945
Ferrochelatase, 268
Fetus
carbohydrate of, 603-6
degradation of, 625
Fibrinogen, 603, 604, 610, 628
Flagella, 114
Flagellin, 119
Flavodoxins, 870, 871
Fluorodinitrobenzene, 644
5-Fluorouracil, 550, 551
FMN
in L-amino acid oxidase, 876, 877
in flavodoxins, 870, 871
O-R potential of, 871
in phytoflavin, 870
Folate reductase, 944
Follicle stimulating hormone
carbohydrate role in, 628
releasing factor for, 515, 516
Formamidase, 949
Formate dehydrogenase, 457
Formylmethionine
in bacteriophage proteins, 537
in protein synthesis, 280
Formyltetrahydrofolate synthetase, 31
Fowlpox virus, 327
F pili, 534
Fructokinase, 656, 657
Fructose 1,6-diphosphatase
dissociation of, 26, 27
levels of, 937
simulation of, 477
subunits of, 30
in sucrose synthesis, 415, 416
Fucose, 600, 606, 614, 615
Fucosidosis, 626

SUBJECT INDEX

- Fumarase
alkylation of, 111
localization of, 267
p-mercuribenzoate reaction
with, 103
subunits of, 31
thiol groups of, 103
- G
- Galactose
binding protein for, 587
in glycoproteins, 600, 604-6, 608, 612-17, 621, 622, 625
transport of
and binding protein, 587
by membranes, 570
 β -Galactosidase
induction of, 494
messenger RNA of, 140
in *Staphylococcus aureus*, 567
subunits of, 32
Galactosyl transferase
in lactose synthetase, 458, 459
lipid requirements of, 378
Gangliosides, 349
Gangliosidosis, 626
Gas-lipid chromatography
of diol ethers, 334
and glyceride analysis, 333, 334
of glycerol ethers, 334
of lecithins, 340
Gaucher's disease, 627
Geotrichum candidum, 333
Gibbs-Donnan law, 5
Globin, 998
 γ -Globulin
disulfides of, 109
nitration of, 119
Glucagon
actions of, 842
and adenylyl cyclase, 650, 651
association of, 42
chemical synthesis of
coupling reactions, 844-46
protecting groups in, 843-46
strategy of, 844
and cyclic AMP, 650, 651
and enzyme synthesis, effect, 955, 956
and glycogen metabolism, 647, 648
sequence of, 842
Glucocorticoids, 652, 653
Glucokinase
and hexokinase, 950
insulin effect, 656
- levels of, 936
properties of, 655, 656
- Gluconeogenesis, 480
Glucosaminyl phosphatidyl-glycerol, 369, 370
- Glucose
in glycoproteins, 600, 608, 622
hexokinase dissociation by, 27
- Glucose oxidase, 869
Glucose 6-phosphatase
lipid requirement of, 377
localization of, 266
regulation of, 936, 948
- Glucose 6-phosphate dehydrogenase
assay of, 940
degradation of, 963, 969
levels of, 937, 946, 952
maleimide inactivation of, 108
subunits of, 31, 32
sulphydryl groups of, 108
- Glucosyl transferase, 711
Glucuronic acid, 600, 617
- β -Glucuronidase
carbohydrate role in, 628
level of, 952
localization of, 952, 963
- Glutamate-alanine transaminase
assay of, 940, 946
degradation of, 957, 958
and glucocorticoid, 934, 950, 957, 958
synthesis of, 934, 957, 958
- Glutamate-aspartate transaminase, 946
- Glutamate-pyruvate transaminase, 448, 449
- Glutamic acid
protecting groups for, 843
in ribonuclease T₁, 117
as transmitter, 790, 791
- Glutamic dehydrogenase
dissociation of, 26, 27, 42
inactivation of, 946
localization of, 267
lysine in, 108
maleimide reactivity of, 108
subunits of, 33
- Glutamic-oxaloacetic transaminase, 268
- Glutamine-PRPP amidotransferase, 31
- Glutamine synthetase
conformation of, 58
degradation of, 969
dissociation of, 114
- levels of, 941
maleylation of, 114
subunits of, 32, 37, 58
sulphydryl groups in, 104
symmetry of, 37
- Glutamyl transferase, 944
- Glutathione
feeding response receptor, 787
oxidation of, 102
- Glutathione reductase
catalytic mechanism of, 869
FAD of, 875
subunits of, 875
- Glyceraldehyde 3-phosphate, 364
- Glyceraldehyde 3-phosphate dehydrogenase
dimers from, 39
dissociation of, 27, 39, 42
hybridization of, 28
inactivation of, 659
iodine oxidation of, 102, 103
structure of, 659
- subunits of, 28, 31, 37, 39, 559
- succinylation of, 27
symmetry of, 37, 39
- Glycerides, 333, 334
- Glycerol ethers, 334, 335
- Glycerol-3-phosphate acylation of, 360-63
in phosphatidylglycerol synthesis, 369
- Glycerol phosphate dehydrogenase
inactivation of, 946
levels of, 937
subunits of, 30
- Glycine oxidase, 876
- Glycogen
degradation of
cyclic AMP role, 648, 649
epinephrine role, 648, 649
insulin role, 650, 651
functions of, 640
labile bonds in, 654
metabolism of
control of, 447, 448, 647-54
debranching enzyme, 647
and enzyme complexes, 447, 448
glycogenolysis, 648, 649
and glycogen synthetase, 447, 448, 643-46
hormone role, 447, 647-53
neural control of, 653

- and phosphoglucomutase, 646, 647
and phosphorylase, 447, 640-43
simulation of, 477
and UDP glucose pyrophosphorylase, 643
molecular weight of, 653, 654
structural role of, 448
synthesis of
 and carbon dioxide concentration, 8, 9
enzymes of, 447, 448
from fructose, 9
from glycerol, 9
hormonal effects, 447
from lactate, 12
in liver, 11, 12
from pyruvate, 9
regulation of, 447, 448
- Glycogenolysis**
cyclic AMP role, 648, 649, 808
epinephrine effect, 648, 849
- Glycogen synthetase**
control of, 447, 448, 643, 644
and electrical stimulation, 653
interconversions of
 by calcium, 646
 cyclic AMP role, 645, 651, 652
forms, 643, 644
insulin effect, 651-53
kinase role, 644-46
phosphatase role, 646
nucleotide effect on, 644
tissue distribution of, 643, 644
in yeast, 644
- Glycogen synthetase kinase, 448**
- Glycolipids**
acyl glycoses, 347
gangliosides, 349
glycosphingolipids, 348-50
glycosyl diglycerides, 346, 347
lipopolysaccharides, 350
- Glycolic oxidase**
localization of, 419
subunits of, 32
- Glycolic acid, 418, 419**
- Glycolysis**
aldolase, 658, 659
glucokinase in, 656
glyceraldehyde phosphate dehydrogenase, 659
hexokinase in, 655, 656
lactate dehydrogenase, 661-63
lipid synthesis, role in, 365
- oscillation in, 486
phosphofructokinase in, 657, 658
phosphoglyceromutase in, 660
phosphorylation in, 654-58
pyruvate kinase in, 660, 661
regulation of
 by ATP compartmentation, 475, 476
 cyclic AMP role, 806
 phosphofructokinase role, 476
simulation of, 475-78
and sugar transport, 663, 664
- Glycoproteins**
asparagine linked, 612, 614
biosynthesis of
 carbohydrates of, 374, 619-25
 enzymes of, 619-24
 genetic control of, 624
 in Golgi apparatus, 622, 623
 localization of, 618
 and microheterogeneity, 623, 624
 regulation of, 624, 625
 specificity of, 620
 temporal relationships, 618, 619
carbohydrates of
 and function, 628, 629
 glycopeptide bonds in, 607-9
 glycopeptide isolation, 602
 microheterogeneity in, 606, 607
 nature of, 600, 602, 603
 position of, 609, 611, 612
 structural patterns, 602-4
 catabolism of
 disorders of, 626-28, 631
 enzymes in, 625, 626
 localization of, 625
 and cell adhesion, 809
 classification of
 by source, 601
 structural, 612, 614-18
 by sugars, 600
definition of, 600
in disease, 626-28, 631
distribution of, 600, 631
functions of, 628, 629
glycopeptide bonds in
 to asparagine, 607
identification of, 609
position of, 609, 611, 612
- sequences around, 609, 611
to serine, 608
stability of, 608
to threonine, 608
- hydroxylsine linked, 617
membranes as, 629, 630
microheterogeneity of
 and biosynthesis, 623, 624
cause of, 606, 607, 623, 624
nature of, 606, 607
mucopolysaccharides, 604, 616, 617
proteoglycans, 604, 616, 617, 627
serine linked, 614-16
structure of
 asparagine linked, 612, 614
- Glycosidases, 625**
- Glycosphingolipids, 348, 349**
- Glycosyl diglycerides, 346, 347**
- Glycosyltransferases, 621-25**
- Golgi apparatus, 622, 623**
- Gramicidin, 395, 396, 398**
- Growth hormone**
disulfides in, 109
narcotics, effect on, 821, 822
release of, 801
releasing factor for, 519, 520
- subunits of, 30
- GTP**
glutamate dehydrogenase,
 dissociation by, 27
and protein synthesis, 461, 462
- Guanidine hydrochloride, 26**
- Guanylate kinase, 294, 303**
- H
- Haptoglobin, 30**
- HeLa cells**
adenovirus infection of, 726
- chromatin of, 156-58
chromosomes of
 composition of, 156-58

SUBJECT INDEX

- DNA replication in, 159, 162
 electronmicroscopy of, 160
 histones of, 157, 158
 DNA replication in, 163
 mitochondria of
 DNA of, 255
 RNA of, 259, 263
 RNA synthesis in, 265
 ribosomal RNA of
 biosynthesis of, 201, 207, 212
 composition of, 187
 genes for, 213, 216
 methylated nucleotides in, 189, 191, 192
 precursor of, 201, 203
 pseudouridylic acid in, 187, 188, 192
 5S, 209, 210, 212, 213
 secondary structure of, 194, 195
 sequence analysis in, 191, 192
 α -Helix, 69
 Hemagglutinin, 603, 605, 612, 613
 P-450 Heme protein
 phenobarbital effect on, 938, 960
 properties of, 686-88
 Hemerythrin
 dissociation of, 27, 40-42, 50, 51, 114
 hybridization of, 28
 ligand binding by, 40, 58
 subunits of, 30, 40, 41
 succinylation of, 114
 symmetry of, 41
 Hemocyanin
 dissociation of, 114
 subunits of, 33, 35, 39
 succinylation of, 114
 symmetry of, 35, 39
 Hemoglobin
 abnormal
 -Bohr effect in, 55, 1016
 Chesapeake, 55, 986, 993, 1012, 1016, 1023
 Chiapas, 55, 986
 clinical symptoms of, 55
 dissociation of, 54, 55, 1005
 E, 54, 55, 986
 G Chinese, 55, 986
 H, 1005, 1023
 J Capetown, 55, 986
 Kansas, 54, 55, 985, 986, 1005, 1016
 Kempsey, 55, 986
 K Woolwich, 55, 986
 M, 984, 985, 1016, 1023
 New York, 54, 55, 986
 Philly, 54, 55, 986
 properties of, 55, 984, 985, 1023
 S, 55
 structure of, 982-85, 988, 989
 and subunit interactions, 53-55, 986
 Tacoma, 54, 55, 986
 Yakima, 55, 986
 Zurich, 984, 1016, 1023
 adult
 dimers of, 39, 54
 dissociation of, 27, 40, 54, 58
 interface contacts in, 52, 53
 symmetry of, 36, 37, 39, 41
 aggregation of, 40-42
 Bohr effect in
 abnormal hemoglobins, 1016
 artificial intermediates, 1011, 1015
 and carbon dioxide binding, 1014
 and conformation changes, 1011
 features of, 1010, 1013, 1014
 and organic phosphate binding, 1012, 1013
 side chains in, 1010, 1011
 stereocochemical interpretation of, 1011
 carbon dioxide titration of, 4, 5
 carbon dioxide transport by, 1013, 1014
 carbon monoxide binding of, 1008
 chain equivalence in, 1030, 1031
 conformation of
 and Bohr effect, 1011
 changes in, 1028-31, 1033, 1035, 1036
 in deoxyhemoglobin, 979-82, 1030
 globin of, 998
 heme in, 979, 984, 985, 990-92, 1028, 1029
 and iron, 1028, 1029
 and ligand binding, 979-82, 991-93, 1028-31, 1033
 mutants of, 982, 983
 and myoglobin structure, 979, 983, 987
 in oxyhemoglobin, 979-82, 991, 992, 1030
 in solution, 987, 990
 subunit interactions, 979, 983, 986, 995, 996
 dissociation of
- in alkali, 1002
 in dilute solution, 999, 1000, 1026, 1027
 dimer formation, 39, 42, 53, 54, 979, 999-1007
 and ligand binding, 42, 58, 998, 999, 1005-7, 1026, 1027
 at low pH, 1001, 1002
 and oxygenation, 58, 1000-3, 1006, 1007
 by paramercuribenzoate, 27, 1002-4, 1032
 in salt solutions, 40, 999-1001
 species dependence of, 1004, 1005
 variants of, 53, 54, 1005
 erythrocytosis
 subunits of, 32, 35, 37
 fetal, 27
 heme group of
 binding of, 980, 992, 993
 conformational changes at, 1029
 environment of, 979, 980, 984, 985, 1029
 in mutants, 983-85
 and oxygen binding, 980, 981, 984, 985, 991
 immunochemistry of
 hybrids of, 997
 kinetics of, 997
 and oxygenation, 997
 interface contacts in
 modification of, 58-59
 mutation, effect of, 53-55
 nature of, 52, 54
 kinetics of reactions
 abnormal hemoglobins, 1023
 and dimer model, 1025-27, 1034
 dissociation, 1019, 1024, 1026
 of isolated chains, 1022
 ligand dependence of, 1018, 1019, 1024, 1025
 of modified hemoglobins, 1022, 1023
 nonmammalian, 1023, 1024
 photodissociation, 1019-21, 1025-27
 rapid mixing experiments, 1017-19, 1025-27
 reaction mechanism, 1017, 1025, 1026
 relaxation methods in, 1021, 1022, 1025
 steps involved, 1017, 1026
 structural changes, 1031, 1033

- levels of, 941, 952
 ligand binding by
 abnormal species, 1015,
 1016
 Bohr effect, 1010-12
 carbon dioxide, 4, 5, 1013,
 1014
 carbon monoxide, 1008,
 1014, 1022, 1028, 1027,
 1031
 and conformation, 106,
 979-82, 991-93, 1021
 ethylisocyanide, 1008, 1014,
 1018, 1021, 1026
 ferric hemoglobin, 1009
 fractional saturation,
 1031
 hybrid molecules, 1015
 kinetics of, 1017-27
 models of, 1033-36
 modified, 1016, 1017
 organic phosphates, 1012,
 1013
 oxygen, 1007, 1008, 1013,
 1014, 1018, 1021-24,
 1026, 1031
 and redox equilibria, 1008,
 1009
 solvent effects, 1010
 stable intermediates, 1014,
 1015
 messenger RNA of, 145,
 965
 models of, 1033-36
 oxygenation of
 Bohr effect, 1013, 1016
 and carbon dioxide binding,
 4, 5
 computer studies, 482,
 483, 1026
 determination of, 1007,
 1008
 and 2, 3-diphosphoglycerate,
 58, 1013
 kinetics of, 1014, 1021-
 26
 and ligand binding, 58,
 1007, 1014, 1031
 and structure, 56, 57,
 1015, 1016, 1022-24
 and sulphydryl reactivity,
 106, 1031
 preparation of, 4
 reassociation of, 1004-6
 redox equilibrium of, 1008,
 1009
 solutions of
 circular dichroism of,
 995
 dissociation of, 999-1004
 electron paramagnetic
 resonance of, 991, 992
 immunochemistry of, 997,
 998
 nuclear magnetic resonance
 of, 990, 991
 optical rotatory dispersion
- of, 987, 995
 reactivity of, 987, 990
 spectroscopy of, 992-
 94
 sulphydryl groups of, 995,
 996, 1016
 titration of, 996, 997
 structure of
 complexity of, 69
 deoxyhemoglobin, 979-
 82
 dissociation of, 979, 998-
 1004
 heme in, 979, 980, 984,
 985, 990-92
 histidine in, 982, 992, 993,
 997, 1029
 mutants of, 982-85, 988,
 989
 and myoglobin structure,
 979, 983
 oily pocket in, 69
 oxyhemoglobin, 979-82
 in solution, 987, 990
 subunit interactions in,
 979, 983, 986, 995, 996
 three-dimensional, 979-83,
 987, 990
 tryptophan in, 994
 X-ray analysis of, 979-
 83
 subunit interactions in
 and electron spin resonance,
 56
 extrinsic factors in, 57-
 59
 and interface contacts,
 53-55
 intrinsic factors in, 56
 and ligand binding, 57
 models of, 487
 and nuclear magnetic re-
 sonance, 56
 and oxygenation, 56,
 57
 subunits of
 circular dichroism of,
 995
 dimers of, 39
 electron paramagnetic re-
 sonance of, 991, 992
 equivalence of, 1030,
 1031
 and functional models,
 1033, 1034
 genetic linkage of, 166
 interactions of, 979, 981,
 983, 986
 isolation of, 1004-7
 nuclear magnetic resonance
 of, 991
 optical rotatory dispersion
 of, 995
 oxygen affinity of, 986,
 1014
 properties of, 30
 recombination of, 999,
- 1004-7
 spectroscopy of, 993,
 994
 symmetry of, 36, 37
 sulphydryl groups of, 103,
 106
 symmetry of, 36, 37, 39,
 41
 synthesis of, 802
 valine, reactive in, 122
 X-ray diffraction of, 36,
 37, 52, 55-57
Hemophilus parainfluenzae
 cytochromes a of, 675
 phospholipid metabolism in,
 372
 phospholipids of, 336
Herpesviruses
 and Burkitt's lymphoma,
 736, 737
 carcinogenesis by, 735-
 37
 DNA of, 707
 and DNA synthesis, 710
 and Lucké carcinoma, 735,
 736
 and Marek's disease, 736
 properties of, 735
Heterochromatin, 166, 187
Hexokinase
 dissociation of, 27, 105,
 106
 and glucokinase, 950
 insulin effect, 656
 level of, 954
 localization of, 287
 molecular forms of,
 856
 properties of, 655, 656
 simulation of, 477
 subunits of, 30
 sulphydryl groups of, 105,
 106
 types of, 655
Hexosephosphate isomerase,
 476, 477
High density lipoprotein,
 114
Hippocampus, 784
Histidase, 935
Histidine
 at active sites, 106, 110
 alkylation of, 107, 110,
 111
 carbethoxylation of, 112
 1, 3-dibromoacetone, reaction
 with, 106
 diethylpyrocarbonate, re-
 action with, 112
 in hemoglobin, 982, 992,
 993, 997, 1029
 and iodine, reaction with,
 102
 in lysozyme, 112
 photooxidation of, 110
 protecting groups for, 843,
 846, 850, 854, 856, 857

SUBJECT INDEX

- in proteins
at active site, 106, 110
alkylation of, 107, 110,
111
and 1, 3-dibromoacetone,
reaction with, 106
diethylglyrocarbonate, re-
action of, 112
photooxidation of, 110
in ribonuclease, 111,
112
- Histidine decarboxylase, 31
Histidine-pyruvate transaminase,
935
- Histidinol dehydrogenase,
464, 465
- Histones
acetylation of, 171, 172
in chromatin
electrophoresis of, 157
extraction of, 156, 157
as repressors, 167
and structure, 161, 162
sulphydryl groups of,
158
- in chromosomes
electrophoresis of, 157
extraction of, 156, 157
nature of, 169
sulphydryl groups of,
158
- and cyclic AMP, 967
in development, 170
director hypothesis, 173-
75
- DNA binding of, 170, 171
fractionation of, 170
masking hypothesis, 175,
176
- messenger RNA of, 145
methylation of, 171, 172
modification of
acetylation, 171, 172
by mercaptoethanol, 172
methylation, 171, 172
phosphorylation, 967
and regulation, 171-73,
966, 967
- as repressors
in vitro, 167
mechanism of action, 167,
169-70, 173-76
modification role, 171-73
relative effect of, 169-71
structure of, 171, 176
sulphydryl groups in, 172
synthesis of, 169, 170
- Homochromatography, 231,
232
- Homoserine dehydrogenase,
463, 464
- Hormones, see specific
hormones
- HSK pathway
carbon dioxide fixation in,
404-8
distribution of, 405, 406
- efficiency of, 407, 408
evidence for, 405
feasibility of, 407, 408
and leaf structure, 408
and photorespiration, 408,
409, 416, 417
reactions of, 404, 405
Hurler's syndrome, 627
- Hyaluronic acid, 616
- Hybridization
of adenovirus DNA
to viral messenger RNA,
729, 731, 732
and virus groups, 723,
724
- of chloroplast DNA, 146
- competition, 143, 144
of eukaryotic nucleic acids
competition, 143-45
problems of, 141, 144
redundancy in, 142, 143
renaturation studies,
146
- tissue specificity, 145
- of herpesvirus messenger
RNA, 736
- of isoenzymes, 28
- locus specificity of
in bacterial nucleic acids,
140, 141
in eukaryotic nucleic
acids, 145, 146
and sequence divergence,
141
- in viral nucleic acids,
139, 140
- of mitochondrial DNA, 146,
263, 264
- of natural polynucleotides
chain length effect, 134,
135
- free ends, effect of, 136
partially complementary,
135
- unpaired base effect, 135
- of polyoma DNA, 715,
716
- of protein oligomers, 28
- reaction conditions for,
136-39
- ribonuclease use in, 146,
147
- saturation, 143
- sensitivity of
factors effecting, 132
limitations on, 132, 140,
141, 147, 148
unpaired base effect, 134,
135, 147
- specificity of
chain length effect, 133-35,
139
- definition of, 132
in eukaryotic nucleic acids,
141-46
- locus specificity, 139-41
- natural polynucleotide
studies, 134-36, 140
reaction conditions, effect,
136-39, 143
and redundancy, 142, 143
ribonuclease use, 146,
147
- sugar effect, 133, 134
synthetic polynucleotide
studies, 133, 134, 147
unpaired base effect,
134
- of succinylated proteins,
28
- of SV 40 DNA
to cellular DNA, 706
to polyoma DNA, 707
to viral RNA, 715, 716
- of synthetic polynucleotides,
133, 134
- techniques of, 712, 713
of tumor virus RNA, 745,
746
- Hydrocarbons
biosynthesis of, 325-26
distribution of, 324-27
- β -Hydroxy acyl-coenzyme A
dehydrogenase, 268
- β -Hydroxy butyrate
dehydrogenase, 268
- 11- β Hydroxylation, 485
- Hydroxylsine
in glycoproteins, 608, 609,
613, 617, 622
- 5-Hydroxymethylcytidine
biosynthesis of, 292, 293,
301-3
- glucosylation of, 304, 305
- 2-Hydroxynitrobenzylbromide,
119-21
- Hydroxyproline
in glycoproteins, 609, 613,
617, 618
- N-Hydroxysuccinimide, 845
- 5-Hydroxytryptamine, 832
- Hydroxyurea
as DNA synthesis inhibitor,
298
- and ribonucleoside
diphosphate reductase,
296, 312
- Hypothalamic releasing
factors
assay of
for follicle stimulating
hormone, 515
for growth hormone, 519
for luteinizing hormone,
512
specificity of, 502
definition of, 501
inactivation of, 522
mechanism of action of,
522, 523
nature of
for ACTH, 517-19
chemical, 502, 503
for FSH, 516, 517

- for luteinizing hormone, 514, 515
for TSH, 506-11
origin of, 503, 504
as polypeptides, 503
purification of
 for ACTH, 517, 518
 for FSH, 515, 516
 for growth hormone, 519, 520
for luteinizing hormone, 512-14
for TSH, 504-6
synthesis of, 508
- Hypothalamus
anatomy of, 500, 501
function of, 782
and hormone release, 782, 783, 801, 802
hormone synthesis in, 501
nature of, 500, 501
releasing factors of
 for ACTH, 504
 assay of, 502
 for FSH, 515-17
 for luteinizing hormone, 503, 511-15
nature of, 502, 503
origin of, 503, 504
for TSH, 504-11
- I**
- Iduronic acid, 600, 617
Immune response
 and cellular immunity
 cell sensitization, 907, 908
 irreversible steps in, 909, 910
 specificity of, 908, 909
 transfer of, 910
lymphoid cell interactions in
 and antigenic determinants, 918, 919
 bone marrow cells in, 916, 917
 and cellular immunity, 919, 920
stoichiometry of, 915
thymus cells in 916-18
and tolerance, 920, 921
precursor cells for
 functional properties, 903, 904
 and specificity, 902
 structural properties, 904-7
receptor triggering
 and antibody interaction, 912, 915
 and antigen interaction, 911, 912, 914, 915
lymphoid cell interactions in, 915-21
macrophage role, 911-15
RNA role in, 913, 914
- tolerance in, 920
Immunoglobulins
antigen binding by
 and conformation, 899-902
 with multivalent ligands, 901-3
 and proteolysis, 900
 with univalent ligands, 899-901
carbohydrate of, 603-6, 609-13, 615, 618, 628
and cellular immunity
 cell sensitization, 907, 908
 irreversible step in, 909, 910
 receptors, 908-10
 specificity of, 908, 909
 transfer of, 910
conformational changes in
 and multivalent ligand binding, 901, 902
 types of, 899
 and univalent ligand binding, 899-901
conformation of
 and antigen binding, 899-902
chain interaction in, 895, 897
in electronmicroscope, 897, 901, 902
folding of chains in, 895 gross, 897-99
regions of, 897-99
X-ray diffraction of, 899
dissociation of, 114
electronmicroscopy of, 897
formation of
 and affinity, 903
 and antigenic determinants, 918, 919
bone marrow cells in, 916, 917
and cellular immunity, 907-10, 919, 920
cooperation in, 918, 919
lymphoid cell interactions, 915-21
macrophage role, 911-15
and precursor cells, 902-7
receptor triggering, 910-21
specificity of, 902
thymus cells in, 916-18
and tolerance, 920, 921
heavy chains of, 892-94
light chains of, 891, 892
messenger RNA of, 145
polyalanylation of, 115
precursor cells for
 and affinity, 903, 905
 autoradiography, 905, 906
charge effect, 903, 904
lymphocytes as, 905, 906
- and specificity, 902
stimulation of, 907
structural properties of, 904-7
surface membranes of, 906, 907
specificity of
 and cellular immunity, 908, 909
 and precursor cells, 902-7
structure of
 disulfide bonds in, 891, 894-96, 898
 heavy chains of, 891-94
 light chains of, 891, 892
 polymers of, 891
 three-dimensional, 895, 897-99
succinylation of, 114
Indoleglycerolphosphate synthetase, 436-38
- Insulin
and adenyl cyclase, 650
association of, 42, 482
and enzyme synthesis, effect, 955, 956
hexokinase, effect on, 656
and phosphodiesterase activity, 650
and phosphorylase, 651
precursor of, 69
secretion of, 782
subunits of, 30
and sugar transport, 663, 664
and transferase kinase, 651
Iodination
of proteins, 112
of tyrosine residues, 119
Iodine
and amino acids, reactivity of, 102, 112
and protein, oxidation by, 102, 103
Iodoacetamide, 641
Iodoacetate, 27
Isoalloxazine addition reactions of, 868, 869
photoreduction of, 869
reoxidation of, 870
Isocitrate dehydrogenase dissociation of, 27
localization of, 267
methionine in, 121, 122
NADH control of, 480
sulphydryl groups in, 104
Isocitrate lyase, 31, 36
Isoleucine
in hydrocarbon biosynthesis, 325, 326
transport of, 585
Isoleucyl-transfer RNA synthetase, 108
Isopentenyl pyrophosphate, 376

SUBJECT INDEX

J

Jack bean, 602

K

KH cells

abortive infection of, 734,
735adenovirus infection of, 726-
30, 734, 7355S RNA of
composition of, 209
purification of, 230
sequence analysis of, 210,
217, 218, 236, 239

Keratan sulfate

structure of, 608, 612-15

 α -Keto acid dehydrogenase
in *E. coli*, 442-45 α -ketoglutarate dehydro-
genase complex

enzymes of, 442

genetics of, 442, 443

reactions of, 442, 443

structure of, 445

pyruvate dehydrogenase
complexelectronmicroscopy of,
444

enzymes of, 442

genetics of, 442, 443

reconstitution of, 443-45

regulation of

in *E. coli*, 445

in mammals, 445-47

by phosphorylation, 445,
446 α -Ketoglutarate dehydrogenase

as enzyme complex, 442

genetics of, 442

localization of, 267

reactions of, 443

structure of, 445, 446

Krebs cycle, 480, 481

Kynureine 3-hydroxylase,
268

L

Lactalbumin

glycosyltransferase

effect on, 625

histidine in, 112

in lactose synthetase, 94,
458, 459

structure of, 94

Lactate dehydrogenase

of *Acetobacter suboxydans*,
681

aggregation of, 41, 43

alkylation of, 111

in cell culture, 945

degradation, rate of, 943,
959

forms of, 661, 662

histidine in, 106, 107, 111

hybridization of, 28

inhibition of, 662

isozymes of

properties of, 661-63

release of, 477

maleimide reactivity of,
108mercuric chloride complex
of, 106, 107

simulation of, 476, 477

subunits of

dissociation of, 41

genetic linkage of, 166

properties of, 31, 661,
662

symmetry of, 36, 37

sulfhydryl groups in, 104,
106-8

symmetry of, 36, 37

synthesis, rate of, 943, 959

ternary complexes of, 662

 β -Lactoglobulin

association of, 42, 43, 56

iodine oxidation of, 102

subunits of, 30

Lactose

synthesis of, 458, 459

transport of

ATP role, 579

models of, 578

M protein role, 578-80

phosphotransferase role,
580, 581

Lactose operon

messenger RNA of, 140

transcription of, 165

Lactose synthetase

components of, 94, 458

 α -lactalbumin in, 94, 458,
459

regulation of, 941

L cells

ribosomal RNA of

biosynthesis of, 201, 207

heterogeneity of, 217

methylated bases of, 189,

190, 208

precursors of 201

Le Chatelier's principle, 41

Leucine binding protein, 586

Leukemia viruses

properties of, 738

replication of, 738, 739

Lipids

amino acyl, 350, 351

as cofactors, 377-79

diol ethers, 335

fatty acids

analysis of, 332

in bacteria, 328-30

in fungi, 330

in insects, 331

in plants, 330, 331

in vertebrates, 331, 332

in fowlpox virus, 327

glycerides, 333, 334

glycerol ethers, 334, 335

glycolipids, see Glycolipids

hydrocarbons, 324-27

phospholipids, see Phospho-

lipids, and specific com-

pounds

polypropenols, 327, 328

sialoproteins, 350

sulfur, 351

wax esters, 332, 333

see also specific lipids

Lipoamide dehydrogenase

dissociation of, 874, 875

FAD of

analogs of, 874

dissociation of, 874, 875

function of, 873

localization of, 268

subunits of, 874

types of, 873, 874

Lipoic acid, 296

Lipoic reductase-trans-

acetylase, 33

Lipoproteins, 350

in bacteria, 350

excretion of, 373, 374

lipid A of, 350

Lipoproteins, 591, 592

Lipovitellin, 32

Luciferase, 30

Lucke carcinoma, 735, 738

Luteinizing hormone

and adenylyl cyclase, 649

releasing factor for

assay of, 512

composition of, 512

evidence for, 511

nature of, 514, 515

origin of, 503

purification of, 512-14

stability of, 513

Luteotrophin, see Prolactin

Lymphocytes, 905-7

Lysine

acylation of, 113-16

in D-amino acid oxidase,

882

arylation of, 113

in biotin enzymes, 760-62

maleylation of, 113, 114

protecting groups for, 843

in proteins, reactions, 108,

113-16

in ribonuclease T₁, 857

in tobacco mosaic virus,

114, 115

uptake of, 367

Lysophosphatidyl acylhydrolase,

380, 381

Lysophosphatides

acetylation of, 362-64

as cofactors, 377

Lysosomes

glycosidases in, 625

phospholipases in, 380, 381

and protein degradation, 969

Lysozymes

active site of, 117

- aggregation of, 41
 alkylation of, 111, 112
 arginine of, 116
 carboxyl groups of, 117
 catalysis by
 energy considerations, 75-77
 mechanism of, 71, 74-77
 and substrate strain, 71-77
 disulfides in, 109
 glycoprotein degradation by, 625
 glycosidases in, 625
 histidine in, 112
 iodination of, 119
 methionine in, 121
 nitration of, 119
 nuclear magnetic resonance of, 112
 picolinimidation of, 115
 structure of
 at active site, 70, 71, 74-77, 95
 cleft in, 70, 74, 75
 crystal forms of, 69
 and lactalbumin structure, 94
 and substrate binding, 74-77
 substrate for, 75
 tryptophan in, 112
 X-ray diffraction of
 cleft in, 70, 74, 75
 crystal forms, 69
 resolution of, 65
 and substrate binding, 74, 75
 Lysylphosphatidylglycerol, 369
- M**
- α_2 -Macroglobulin
 carbohydrate of, 603, 605-7
 microheterogeneity in, 606
 Macrophages
 and antibodies
 in antigen distribution, 915
 interactions with, 912
 production of, 913
 antigens, interactions with, 911, 912, 914
 in immune response initiation
 antibody interaction, 912, 915
 antigen interaction, 911, 912, 914
 enhancement of, 911
 information transfer, 913, 914
 requirement of, 911
 RNA role, 913, 914
 Malate dehydrogenase
 dissociation of, 26, 27
 levels of, 937
 localization of, 287
 methionine in, 121, 122
- subunits of, 30
 Maleic anhydride
 and dissociation of subunits, 27, 114
 and lysine, 113, 114
 in protein sequence analysis, 113, 114
 Maleimides, 107, 108
 Maleylation
 of proteins
 and dissociation, 27, 114
 and sequence analysis, 113, 114
 reversal of, 27, 113, 114
 Malic dehydrogenase, 271
 Malic enzyme, 954
 Mammary tumor virus, 739, 740
 Mannans
 biosynthesis of, 328, 374-76
 Mannose
 in glycoproteins, 600, 605, 606, 612, 621
 Marek's disease, 738
 Mass spectrometry
 of fatty acids, 332
 of hydrocarbons, 325, 326
 of oligonucleotides, 243, 246
 of peptides, 861
 Median eminence, 501
 Melanocyte-stimulating hormone
 and ACTH release, 518
 secretion of, 521, 522
 Membranes
 of antibody precursor cells, 906, 907
 barrier properties of
 leakage temperature, 573
 and phospholipid, 572, 573
 to sugars, 577
 biosynthesis of, 582
 chloroplast
 antibiotic effect, 394, 396
 ATP permeability of, 412, 417
 and carbon dioxide fixation, 414, 415
 and chloride uptake, 394
 electron flow, effect on, 391
 gramicidin effect, 396
 and H⁺ uptake, 394, 396-403
 ion movement across, 394-403, 413, 414
 valinomycin effect, 396
 electron transport, 336
 gangliosides in, 349
 as glycoproteins, 629, 630
 glycosyltransferases of, 622
 lipids of, 328
 of mitochondria
 lipid role in, 281
 preparation of, 266, 269
- proteins of, 266-69, 277, 278, 281, 282
 self-assembly of, 281, 282
- of neurons
 and action potential, 789
 barbiturate effect on, 797, 798
 conformation of, 788, 789
 depolarization of, 788
 sensitivity of, 797, 798
 phospholipids of
 in bacteria, 336
 and barrier function, 573, 574
 and transport, 573, 574
 proteins of, 59
 in transformed cells, 721, 722
- transport in
 and barrier properties, 572-74
 limitations of, 571
 mechanism of, 569-72, 589, 590
 osmolarity, effect of, 573
 phosphoenolpyruvate role, 569-71, 589
 regulation of, 574, 575
 of sugars, 568-72, 574,
 575
 temperature effect, 572, 573
- Mesomeses, 163
 p-Mercuribenzoate
 fumarase, reaction of, 103
 hemoglobin, reaction of, 106
 Mercuric chloride, 106, 107
 Messenger RNA
 See RNA, messenger
 Methadone, 829
 Methionine
 alkylation of, 110, 121
 and iodine, reaction with, 102
 oxidation of, 119, 121
 as phosphatidylcholine precursor, 366-68
 photooxidation of, 110, 121
 protecting groups for, 843
 Methionyl-transfer RNA synthetase
 dissociation of, 27, 114
 maleylation of, 27, 114
 subunits of, 30
 Methylated albumin-silicic acid, 230
 β -Methylcrotonyl-coenzyme A carboxylase, 758, 769
 Methylene blue, 110
 6-Methylsalicylic acid, 456
 Michaelis-Menten equation, 486, 487
 Micrococcus cerificans, 362

SUBJECT INDEX

- Micrococcus denitrificans**, 676
Micrococcus lysodeikticus
 acceptor lipid in, 376
 mannan synthesis in, 328,
 375, 376
 prenol biosynthesis in, 327
Microsomes
 lipopolysaccharide synthesis
 in, 374
 lysophosphatide acylation in,
 362, 363
 phosphatidic acid synthesis
 in, 360, 361, 371
 phosphatidylcholine synthesis
 in, 367
 phosphatidylethanolamine
 synthesis in, 368
 phosphatidylinositide
 synthesis in, 370
 phospholipases of
 distribution in, 381
 effect on, 377
 prostaglandin synthesis by,
 365, 366
 see also, Ribosomes
Mitochondria
 abnormal, 282
 ATPase of
 and ATP breakdown
 products, 371, 372
 subunits of, 32
 autonomy of
 origin of, 279, 280
 and self-replication, 280-
 82
 variations in, 264
 bacterial similarity of, 252,
 279, 280
 carbon monoxide blocking,
 479, 480
 computer models of
 approach used, 479
 and cytochrome reduction,
 479, 480
 and electron transport,
 479, 480
 kinetics in, 479
 disruption of membranes
 from, 269
 methods, 266
 DNA of
 buoyant density of, 252,
 254, 255, 275
 catenane form of, 253
 circular dimer of, 253, 282
 circularity of, 253-55
 coding properties of, 257,
 274
 electronmicroscopy of,
 253
 evolution of, 252, 280
 function of, 274, 275, 810
 homogeneity of, 253, 255
 hybridization of, 146
 molecular weight of, 253-
 56
- mutations in, 275, 277
 replication of, 256, 257
 size of, 253-55
 turnover of, 269, 270
DNA polymerase of, 256, 257
enzymes of
 citric acid cycle, 266
 localization of, 265-68
 synthesis of, 271-74
 turnover of, 268, 276,
 277
 formation of
 evolutionary, 279, 280
 nature of, 252, 253
 promitochondria, 278,
 279
 self-assembly, 281, 282
 self-replication, 280-82
 turnover rates, 269, 270,
 276, 277, 281
 independent continuity of,
 251, 252
lipids of
 cholesterol, 280
 turnover of, 269
lipoamide dehydrogenase of, 873
membranes of
 lipid role in, 281
 preparation of, 266, 269
 proteins of, 266-69, 277,
 278, 281, 282
 self-assembly, of, 281,
 282
 oxidation by, 480
 oxygen control model in,
 479
phospholipases in, 381
phospholipids of
 role of, 281
 synthesis of, 252
 turnover of, 269, 270
phospholipid synthesis in,
 361, 362, 367, 371,
 372
polypropenols in, 327
proteins of
 localization of, 265-68
 mutations in, 275, 277,
 278
 organizational, 275
 solubility of, 279
 structural, 277
 synthesis of, 269, 271
 turnover of, 269, 270,
 276, 277
protein synthesis in
 chloramphenicol effect,
 271-74
 cycloheximide effect,
 271-74, 279
 independent, 253
 initiation of, 280
 in vitro, 272, 279
 of mitochondrial proteins,
 271, 279
ribosomes of
- demonstration of, 260
 properties of, 261, 262
 proteins of, 260, 263
 RNA of, 186, 263, 284
 sedimentation coefficient
 of, 185
 size of, 260-62, 280
 stability of, 260
RNA of
 amounts of, 257
 biosynthesis of, 263-65
 composition of, 186
 heterogeneity of, 257
 hybridization of, 263
 properties of, 258, 259
 turnover of, 269
 types of, 257-59, 263
RNA polymerase in, 264
 simulation of, 480
 structure of,
 abnormal, 282
 compartments in, 265
 origin of, 279, 280
 structural protein, 277
 in yeast, 337
Mitosis, 172
Monoamine oxidase
 inactivation of, 947
 localization of, 268
 and narcotic balance, 834
Morphine
 action span of, 833
 calcium effect on, 828
 and catecholamine metabolism,
 833
 and norepinephrine con-
 centration, 832, 833
 and phospholipid turnover,
 827
 and respiratory rates, 827,
 828
 and serotonin turnover, 798
 and synaptic transmission,
 828, 832, 833
 tolerance to
 and dopamine depletion,
 833-35
 duration of, 822
 and 5-hydroxytryptamine
 turnover, 832
 and narcotic drugs, 823
 and respiratory rates,
 827, 828
Mössbauer spectroscopy,
 692
Motor nerve, 484
Mucins
 biosynthesis of, 621
 and blood group activity,
 604-6, 614
 carbohydrate of, 604-6,
 608, 611, 613-15, 618,
 628
 degradation of, 625
Mucopeptides, 374
Mucopolysaccharides
 as glycoproteins, 616

- structure of, 616, 617
- Multienzyme systems
in aromatic acid biosynthesis, 438-42
- aspartate transcarbamylase, 465, 466
- as biosynthetic channeling device, 440
- cysteine synthetase, 462, 463
- definition of, 429
- dissociation of
in aromatic amino acid synthesis, 439, 440
- tryptophan synthetase, 431
- fatty acid synthetase
enzymes in, 449, 452
- mechanism of, 449-56
- structure of, 449
- forces in, 467
- α -keto acid dehydrogenases
in *E. coli*, 442-45
- genetics of, 442, 443
- mammalian, 445-47
- reactions of, 443
- reconstitution of, 443
- lactose synthetase, 458, 459
- lipoamide dehydrogenases
of, 874
- 6-methylsalicylate synthetase, 457
- multifunctional enzymes
aspartokinase, 463, 464
- homoserine dehydrogenases, 463, 464
- PRAMP cyclohydrolase, 464, 465
- nitrate reductase, 457, 458
- occurrence of, 430
- in photosynthesis, 403
- physiological significance of, 466
- in protein synthesis, 460-62
- and regulation, 466, 467
- RNA polymerase as, 459, 460
- tryptophan synthetase
of *E. coli*, 431-37
- of *Neurospora crassa*, 437, 438
- Multifunctional enzymes
aspartokinase-homoserine dehydrogenase, 463, 464
- PRAMP cyclohydrolase, 464, 465
- Murine leukemia viruses
discovery of, 737
- properties of, 738
- purification of, 739
- replication of, 738, 739, 741
- RNA of, 740, 744-46
- Murine mammary tumor virus, 737
- Murine sarcoma viruses
discovery of, 737
- properties of, 738
- purification of, 739
- replication of, 738, 739, 741, 742
- RNA of, 740, 744, 745
- tryptophan synthetase by, 741
- Mycobacterium sp.
cytochromes of, 682
- fatty acids of, 329, 330
- Mycoplasma
fatty acids of, 328
- glycolipids of, 346, 347
- phosphatidylglucose in, 346
- phospholipids of, 336
- Myoglobin
alkylation of, 110
- arginine in, 116
- iodination of, 119
- nitration of, 119
- structure of
complexity of, 69
- iron in, 1028
- oily pocket in, 69
- optical rotatory dispersion, 987, 995
- in solution, 990
- X-ray diffraction of, 65
- Myokinase, 268
- Myosin, 32
- N
- NADH
and alcohol dehydrogenase, 482
- and citrate synthetase, 480
- cytochrome b reduction by, 680
- and isocitrate dehydrogenase, 480
- in Krebs cycle, 480
- and pyruvate dehydrogenase regulation, 445
- and thioredoxin reductase, 873
- NADH-cytochrome c reductase, 268, 267, 269
- NADP
and aspartokinase, 463, 464
- reduction of
in chloroplasts, 400, 401
- flavodoxins in, 870
- photoflavin in, 870
- NADPH
in alkyllether phosphatide synthesis, 364
- in CDP reduction, 296
- and nitrate reductase, 458
- in phosphatidic acid synthesis, 381
- in prostaglandin, 366
- and thioredoxin reductase, 296, 309, 871, 873
- in thymidylate synthesis, 297
- Nalorphine
effect in man, 822, 823, 827
- as narcotic agent
and blockage of narcotic effect, 823, 824
- and norepinephrine depletion, 834
- other effects, 822, 823
- and stereospecificity, 824
- Narcotic drugs
antagonists to
and allosterism, 825, 826
- analgetic effects of, 822, 823
- and narcotic definition, 823
- quantitative effect, 826
- and stereospecificity, 824, 825
- and cholinesterase, 835
- definition of, 823
- effects of
adrenal hypertrophy, 833
- allosteric, 825, 826
- analgetic, 822, 823
- assay of, 824, 825
- causes of, 828
- on cholinergic transmission, 828, 835
- chronic, 829
- duration of, 823
- and histamine release, 821
- on hormone balance, 829
- in vitro, 823, 824
- metabolic, 827-29
- and morphine tolerance, 823
- and nonaddictive effects, 821, 822
- separation of, 822, 823
- and stereospecificity, 822, 824, 825
- synaptic, 828, 832-36
- variety in, 821-23
- metabolic effects of
calcium effect, 828
- phospholipid turnover, 827
- respiratory, 827, 828
- sensitization to, 827, 828
- and tolerance, 830
- in whole animals, 828
- physical dependence on development of, 830

SUBJECT INDEX

- duration of, 823
and other effects, 823,
829, 830
and respiratory rates,
827, 828
and tolerance, 829, 830
receptor sites for
and binding, 827
definition of, 823
localization of, 826,
834
nature of, 824, 826
stereospecificity of, 824,
825
tolerance to, 829-32, 834
- Neisseria*, 329
- Neosomes**
nature of, 195, 196
in ribosome formation, 195-
97
- Nerve growth factor**
activity of, 805, 806
dissociation of, 27
subunits of, 31
- Neuraminic acid**
in glycoproteins, 600, 604-
6, 621
see also Sialic acid
- Neurochemistry**
connectivities in
atrophy of, 799, 800
and blood flow, 805
hypertrophy of, 799-801
and memory, 802
metabolic activation, 803-
7
and nerve growth factors,
805, 806
and neuronal specificity,
807-11
physiological events in,
800-4
time relationships of, 800-
11
drugs, effect on, 797,
798
memory coding, 799
neuronal specificity in
and development, 808-
11
and gene activation, 809
and material exchange,
809, 811
pinocytosis in, 809
and surface properties,
807, 808
synapses in
and connectivities, 799-
811
hypertrophy of, 799-801
transmitters, role of,
789-91
transmitter substances in
acetylcholine, 789-91
 γ -aminobutyric acid, 790,
791
barbituate effect on,
- 797, 798
control of, 794-98
excitatory, 792, 794,
798
glutamic acid, 790, 791
inhibitory, 792, 794,
798
and membrane sensitivity,
797, 798
metabolism of, 792-94
release of, 789-91, 793,
794, 802, 803
removal of, 792-94
storage of, 792, 793
- Neurohypophysis**, 501
- Neurons**
membranes of, 787-89
structure of, 787, 788
- Neurospora crassa*
aromatic biosynthesis in,
439-41
- dehydroquinase of, 440
DNA of, 142, 254, 263
histidine genes of, 165
lysine uptake in, 367
- mitochondria of
DNA of, 254, 263
protein synthesis in, 272-
74
- ribosomes of, 261
RNA of, 186, 187, 258,
263
structural protein of,
277
- nitrate reductase of, 458
phenylalanine biosynthesis
in, 439-41
- poky mutants of, 275, 277
- RNA of
composition of, 186, 187
hybridization of, 213,
263
- mitochondrial, 258, 263
- tryptophan biosynthesis in,
437-41
- tryptophan synthetase of,
438
- tyrosine biosynthesis in,
439-41
- Newcastle disease virus, 740
- Niemann-Pick disease, 346
- Nigericin, 395, 396, 398
- Nitrate reductase, 457,
458
- Norepinephrine**
morphine, effect on, 832,
833, 834
and prolactin release, 521
regulation of level of, 793,
794
secretion of, 782
turnover of, 833, 834
- Nuclear magnetic resonance**
of biotin, 770, 771
of hemoglobins, 55, 56, 990,
991
of lysozyme, 112
- of myoglobin, 990
and protein ionization,
122
and protein structure, 124
of ribonuclease, 111
- Nucleohistone**
composition of, 154
DNA of, 161, 162
structure of, 161, 162
titration of, 158
- Nucleoside diphosphatase**,
482
- Nucleoside diphosphate kinases**
localization of, 268
sources of, 294, 303
specificity of, 293, 294
sulphydryl groups in,
105
- Nucleotide kinases**
bacteriophage induced, 302
in control mechanisms,
294
specificity of, 292-94
- O
- Oncogenesis**
by adenoviruses
and abortive infection,
733
demonstration of, 722,
723
and DNA composition, 723-
25
and transformation, 730
- by herpesviruses, 735-
37
- by RNA viruses, 737-46
- Viruses** in
and cell DNA synthesis,
709, 710
classes of, 703, 704
DNA containing, 703-37
and enzyme induction, 710-
12
genes for, 702, 703
purification of, 703
RNA containing, 737-46
role in, 746, 747
and transformation, 704,
730
and transplantation antigens,
716, 717
and tumor antigens, 716,
717
- Operons**
in bacteria, 165
in eukaryotes, 165, 166
see also specific operons
- Optical rotatory dispersion**
of D-amino acid oxidase,
881
of cytochromes c, 693
of globin, 998
of hemoglobin, 987, 995,
998
of immunoglobulins, 895,

- 899
of lipoamide dehydrogenase, 874
of myoglobin, 987, 995
of nucleohistone, 161, 162
of oligonucleotides, 243
of papain, 89
of RNA, 192, 193
Ornithine aminotransferase, 31
Ornithine decarboxylase, 802
Ornithine transaminase, 935, 945, 949
Ornithine transcarbamylase
degradation of, 969
diet, effect of, 935, 940
localization of, 287
Orotidine 5'-phosphate, 292, 293
Ovalbumin
carbohydrate of, 602-5, 607, 608, 610, 612
degradation of, 626
iodine oxidation of, 102
microheterogeneity in, 607
synthesis of, 965
Ovomucoid
carbohydrate of, 603, 612
disulfides in, 109
Ovttransferrin, 612
Oxaloacetate decarboxylase, 767
Oxytocin, 501
- P
- Palmitoyl transferase, 268
Papain
alkylation of, 107
diisopropylfluorophosphate
reaction, 123
disulfides in, 109, 110
iodine oxidation of, 102
mechanism of catalysis, 89-91
model of, 89
optical rotatory dispersion, 89
specificity of, 89
structure of
at active site, 89-91, 95
and catalytic mechanisms, 89-91
hydrophobic regions in, 69
model of, 89
and substrate binding, 74
X-ray diffraction of
and active site, 89-91
hydrophobic regions in, 69
parts of, 70, 89
- and sequence information, 65, 69
Papilloma viruses
DNA of, 707
properties of, 705
Paramyosin, 31
Parathyroid glands, 14
Parathyroid hormone, 18
Parkinson's disease, 813
Pentazocine, 822, 823
PEP-carboxykinase, 936, 941, 948, 956
PEP-carboxylase
in photosynthesis, 404-6
subunits of, 31
PEP-carboxytransphosphorylase, 32
PEP-phosphotransferase
enzymes of
components of, 563-65
genetic studies of, 566-68
localization of, 563, 564
purification of, 564, 565
genetic studies of
and enzyme function, 566, 567
and sugar transport, 568
in lactose uptake, 580, 581
in membranes
limiting factors, 571
mechanism of, 571, 572
and transport, 568-71
reactions of, 562, 563
role of, 565, 568, 575-77
in shocked cells, 565, 566
Pepsin
inactivation of, 117
nitration of, 119
Peptide synthesis
affinity chromatography in, 859, 860
of calcitonin
and biological activity, 847, 850
coupling in, 849, 850
protecting groups in, 843, 848-50
strategy of, 848
coupling reactions in
azide method, 851, 852
N-hydroxysuccinimide in, 845
racemization in, 846
in ribonuclease S synthesis, 856, 857
in ribonuclease synthesis, 853, 854
in solid phase synthesis, 853
of glucagon
coupling reactions, 844-46
protecting groups in, 843-45
- 46
strategy, 844
N-hydroxysuccinimide in, 845
protecting groups in
biphenyliospropyloxycarbonyl, 848
in calcitonin synthesis, 848
in glucagon synthesis, 844
in ribonuclease S synthesis, 856, 857
in ribonuclease synthesis, 853-55
in secretin synthesis, 851-53
in solid phase synthesis, 854-56
in Staphylococcal nuclease synthesis, 858, 859
racemization in, 860
of ribonuclease
activity of, 854
coupling of, 853, 854
protecting groups, 843, 853, 854
removal from resin, 854, 855
solid phase method, 853-55
of ribonuclease S
activity of, 856
coupling, 856, 857
protecting groups, 843, 856, 857
strategy of, 856
of Ribonuclease T₁, 857, 858
of secretin
coupling methods, 851, 852
by fragment approach, 851, 852
protecting groups in, 843, 851, 852
by stepwise approach, 852, 853
solid phase
approaches to, 855
automation of, 853
coupling in, 853, 854, 860-62
deprotection, 843, 853-55, 861
and enzyme activity, 854
monitoring of, 860-62
protecting groups in, 843, 848, 853, 854
removal from resin, 854, 855
resins used, 853, 855, 861
of ribonuclease, 843, 853-55
of staphylococcal nuclease, 858, 859

SUBJECT INDEX

- Peptidoglycan**
biosynthesis of, 328, 375,
376
enzymes of, 375
- Peroxidases**, 119
- Peroxisomes**
D-amino acid oxidase in,
376
L-amino acid oxidase in,
376
and photorespiration, 419
Peroxacyetyl nitrate, 103
- Phaseolus vulgaris**, 802
- Phenobarbital**, 938, 960,
961
- Phenylalanine**
biosynthesis of
chorismate mutase in,
441, 442
enzyme complex in, 439-
42
prephenate dehydratase of,
441, 442
- Phenylglyoxal**, 116, 117
- Phosphatide phosphatase**,
382, 383
- Phosphatidic acid**
and CDP-diglyceride pre-
cursor, 362
as phosphatidyl choline pre-
cursor, 360
synthesis of
control of, 362
from dihydroxyacetone
phosphate, 361
enzymatic reactions, 361
fatty acid incorporation,
360
in vivo, 359, 360,
364
from lysophosphatides,
362, 363
symmetry of, 359-64
transacylase specificity,
360, 362-64
- Phosphatidylcholine**
biosynthesis of
and acyl unsaturation, 366,
367
control of, 368
enzymes of, 367
methylation, 366, 367
precursors of, 360, 363, 366,
367, 372
and transport, 372
degradation of, 368
in erythrocytes, 363
in fungi, 338
in insects, 338
intracellular distribution,
367, 371, 372
precursors of, 360, 363,
366, 367
in transport processes, 367,
372
in vertebrates, 338,
339
- Phosphatidylethanolamine**
N-acyl, 368, 369
in *Bacillus*, 336
in bacteria, 336, 337
biosynthesis of
and development, 368
in mitochondria, 371,
372
precursors of, 372
rate of, 368, 372, 373
chemical synthesis of, 340,
341
- as cofactor, 377, 378
in fungi, 338
in insects, 338
in membranes, 573, 574
as phosphatidylcholine pre-
cursor, 366, 368
and RNA synthesis, 372
turnover of, 368, 372,
373
- in vertebrates, 338-40
in yeast, 337, 338
- Phosphatidylglucose**, 336,
370
- Phosphatidylglycerol**
in aminoacylphosphatidyl-
glycerol formation, 369
in bacteria, 336, 337
biosynthesis of
and aminoacyl derivatives,
369
and bacteriophage infection,
373
pathway of, 369
and sporulation, 373
phosphotransferase role,
369
- in sugar transport, 564,
565
- turnover of, 372, 373
in undecaprenol metabolism,
376, 377
- Phosphatidyl inositol**
distribution of, 370
hydrolysis of, 370, 371
phosphorylation of, 370
and RNA biosynthesis,
372
- synthesis of, 370
in vertebrates, 339
- Phosphatidylserine**
in fungi, 338
in vertebrates, 339
- Phosphoenopyruvate**
as phosphate donor
acceptors, 562, 563
enzymes, 563-65
- in transport, 562
- phosphotransferase for**
enzymes of, 563-65
genetic studies, 566-68
in membranes, 568-71,
589
- reactions of, 562, 563
in shocked cells, 565,
566
- in transport, 562-78
in transport
and control, 574, 575
enzymes of, 563-65
genetic studies, 566-
68
- in membranes, 568-71
role of, 565
in shocked cells, 565,
566
- transfer reactions, 562,
563
- Phosphofructokinase**
dissociation of, 27, 114
and glycolysis oscillations,
486
- maleylation of, 27, 114
properties of, 657, 658
regulation of, 476, 477,
486
- simulation of, 475, 476
- subunits of, 31
- succinylation of, 27,
114
- sulphydryl groups in, 104,
657
- Phosphoglucomutase**, 646,
647
- 3-Phosphoglycerate dehydro-
genase**, 937
- Phosphoglyceromutase**
allosteric properties of,
476
- properties of, 660
- simulation of, 475, 476
- Phosphohydrolases**, 378
- Phospholipases**
distribution of, 379
lysophospholipase, 380,
381
- and membrane leakage, 573,
574
- and mitochondrion disruption,
266
- phosphatide phosphatase,
362
- phospholipase A, 380,
381
- phospholipase A₁, 380, 381
- phospholipase A₂
colicin effect, 380
distribution of, 379-81
localization of, 268
zymogen of, 380
- phospholipase C
arbovirus, effect on,
382
- enzymes, effect on, 377,
378
- inhibition of, 381, 382
- specificity of, 381, 382
- phospholipase D
in phosphatidylethanolamine
biosynthesis, 398
- properties of, 382
- in structural studies,
379

- and sugar transport, 663
Phospholipids
 N-acylphosphatidylethanolamine, 346
 alkyl ether, 342, 343
 cellular distribution of, 339
 as cofactors, 377-79
 composition of, 373
 diacyl cellular distribution of, 339
 chemical synthesis of, 340, 341
 distribution of, 336-39
 in vertebrates, 338-40
 excretion of, 373
 in man, 340
 metabolism of
 alkenylether phosphatides, 364, 365
 alkyl ether phosphatides, 364, 365
 and amino acid transport, 372
 CDP-choline, 387
 CDP-diglyceride, 362
 control of, 368, 374
 lysophosphatides, 362-64
 in mammalian cells, 371, 372
 methylation of, 366
 in microorganisms, 372-74
 in microsomes, 360-63, 366-68, 370-72
 in mitochondria, 361, 362, 367, 371, 372
 oxidation of, 365, 366
 phosphatidic acid, 359-62
 phosphatidylcholine, 366-68
 phosphatidylethanolamine, 366, 368, 369
 phosphatidylglycerol, 369, 370
 phosphatidylinositol, 370
 and phospholipases, 379-82
 and sporulation, 373
 triose phosphate role, 365
 undecaprenyl phosphate, 374-77
 vinyl ether phosphatides, 364, 365
 phosphatidyl glucose, 336
 phosphoinositides, 337, 338
phosphonolipids
 analysis of, 344, 345
 distribution of, 344
 synthesis of, 345, 346
plasmalogens
 analysis of, 341, 342
 chemical synthesis, 334, 335
 and RNA biosynthesis, 372
 and rubidium uptake, 378
 sphingolipids, 343, 344
 turnover of, 327
Phosphonolipids
 analysis of, 344, 345
 distribution of, 344
 synthesis of, 345, 346
Phosphoribosylanthranilate isomerase, 437, 438
Phosphoribosylanthranilate transferase, 436-38
Phosphoribosyl transferase, 31
Phosphorylase
 activation of, 447, 448, 641, 642
 dissociation of, 27
 distribution of, 640, 641
 as enzyme complex, 447, 448
 insulin effect on, 651
 interconversions of
 calcium effect on, 642
 cyclic AMP in, 642, 651
 insulin effect, 651
 phosphatase, 448, 643
 phosphorylase kinase, 447, 448, 642
 neural activation of, 653
 properties of, 641
 pyridoxal phosphate release from, 641
 subunits of, 32, 39
 symmetry of, 39
Phosphorylase kinase activating factor for, 447, 642
 calcium effect on, 642, 643
 dephosphorylation of, 643
 epinephrine effect, 648, 649
 phosphorylation of, 447, 642
 properties of, 448, 642
Phosphorylase kinase kinase, 447
Phosphorylase phosphatase
 properties of, 448, 643
 regulation of, 447, 643
Phosvitin, 965
Photooxidation, 110
Photorespiration
 carbon dioxide in, 408, 409, 416, 417
 DCMU effect, 417, 418
 and glycolate, 418, 419
 and HSK pathway, 408, 409, 416, 417
 nature of, 416
 peroxisome role, 419
 recycling, 417, 418
 species dependence, 418, 417
Photosynthesis
 carbon path in
 Benson-Calvin cycle, 403, 404
 carbon dioxide in, 403-6
 HSK pathway, 404-10
 and leaf structure, 408
 multienzyme system in, 403
 phosphoenolpyruvate carboxylase role, 404, 405
 and photorespiration, 408, 409
 pyruvate phosphate dikinase role, 405, 406, 409
 ribulose diphosphate role, 403, 405
 cytochrome c role in, 574
 energy path in
 chemiosmotic hypothesis, 389, 390
 coupling sites, 390, 391
 and H⁺ uptake, 393, 396, 399-401
 in nonphosphorylating conditions, 390
 photophosphorylation, 390-93
 and reversibility, 392, 393
 stoichiometric relations, 390, 391
 ion movements in
 and absorbancy changes, 398, 399
 antibiotic effect, 394-96
 chloride, 394
 and electron flow, 400, 401
 H⁺ uptake, 393, 394, 396-403
 phosphate, 413, 414
 stoichiometry of, 396, 400, 401
 in subchloroplast particles, 397
 in isolated chloroplasts
 carbon dioxide uptake, 411, 414
 envelope role, 414, 415
 induction phenomena, 412, 413
 orthophosphate inhibition, 413, 414
 oxygen evolution, 410-12, 414
 and sucrose synthesis, 415
 Warburg effect, 416
 photophosphorylation in determination of, 390, 391

SUBJECT INDEX

- equilibrium of reaction, 391
and H⁺ uptake, 401, 402
reversibility of, 392, 393
stoichiometry of, 390, 391
in subchloroplast particles, 397
uncoupling of, 396, 397
- Phycocyanin**, 32, 35
- Physeum polypecephalum**, 254, 256
- Phytocrome**, 32
- Phytolflavin**, 870
- Phytoglycolipid**, 349, 350
- Phytohemagglutinin**, 367
- Pinocytosis**, 809
- Pituitary gland**, 501
- Plasma high density lipoprotein**, 31
- Plasmalogens**
analysis of, 341, 342
chemical synthesis, 334, 335
- Plasma membrane**
glycoprotein of, 629, 630
lysophosphatide acylation in, 362, 363
- Polarity**
in RNA bacteriophage, 538-40
- Poliovirus**
and ribosomal RNA biosynthesis, 203
subunits of, 33
- Polyacrylamide gel electrophoresis**
of nucleolar RNA, 203
of polynucleotides, 232, 239
- of ribosomal precursors, 206
of RNA, 230, 232
- Polyalanylation**, 115
- Poly-L-lysine**, 171
- Polynucleotide kinase**
and oligonucleotide labelling, 236
and RNA terminal labelling, 233
- Polyoma virus**
defective particles, 706
DNA of
and cell DNA, 707
components of, 706
denaturation mapping of, 707
hybridization of, 706, 707
properties of, 706
replication of, 712
transcription of, 712-14
genes of
- function of, 707, 708, 710, 711
and induced enzymes, 710-12
infection by
and cell DNA synthesis, 709, 710
and cells used, 708
and cell transformation, 714-22
and enzyme induction, 710-12
events in, 708
productive, 704, 708-14
replication, 708-14
and RNA synthesis, 712-14
and virus specific proteins, 714
polypeptides of, 707
properties of, 705, 706
pseudovirions of, 706
replication of
and cell DNA synthesis, 709, 710, 719
and cell transformation, 714-22
and enzyme induction, 710-12
events in, 708
and RNA synthesis, 712, 713
and virus-specific proteins, 714
transformation by
and antigen formation, 716-18, 720
cells, effect on, 721, 722
conditional lethal mutants, 718-20
efficiency of, 714, 715
initiation of, 718, 719
reversion of, 720
and viral DNA, 715-20
and virus rescue, 720
virus-specific molecules in, 715
- Polyprenols**, 327, 328
- Porphyria**, 961
- Potato virus X**, 33
- Poxvirus**, 710
- PRAMP cyclohydrolase**, 464, 465
- Prenyl transferase**, 327, 328
- Prephenate dehydratase**, 441, 442
- Prephenate dehydrogenase**, 441, 442
- Procarboxypeptidase**
dissociation of, 114
subunits of, 30
- Prolactin**, 521
- Proline oxidase**, 267
- Promitochondria**, 278, 279
- Propionibacterium sp.**
fatty acids of, 329
transcarboxylase of, 758, 759
- Propionyl carboxylase**, 33
- Propionyl-coenzyme A carboxylase**
avidin complex of, 773
biotin intermediate in, 758
properties of, 759, 769
- Prostaglandin**, 365, 366
- Proteins**
association of
concentration dependence of, 41, 45-50
cooperativity in, 41, 44-48, 50
cooperativity parameter, 44-50
dilution effect, 40
energy considerations, 39-46, 50, 51
and interface contact, 50
and ligand binding, 40
methods of study, 40
noncooperative, 44, 45
reversible, 40
stepwise, 41
and structural changes, 51
thermodynamic parameters, 42, 43
- catalysis by
and covalent intermediates, 71
and entropic effects, 71
and pK_a perturbation, 95, 96
requirements of, 70, 71
and specificity, 73, 74
and strain effects, 71-73
- crystals of
and enzyme-substrate interactions, 66
liquid in, 66
degradation of
and conformation, 967, 968
enzymes in, 969
and protein turnover, 943
regulation of, 967-69
- dissociation of
by charge change, 26, 27
concentration dependence, 41
by denaturants, 26, 40
by ion binding, 27
- Le Chatelier's principle, 41
by maleylation, 27
with metabolites, 27
by pH adjustment, 27
reversible, 40

- by succinylation, 27
by sulphydryl reagents, 27
disulfide formation in, 69, 103-5
dye interactions with, 123
folding of, 68, 69
geometric arrangement of
cubic, 37, 38
cyclic, 34, 35
dihedral, 36, 37
distribution of, 29, 34
rotation axes in, 34
symmetry in, 29, 33
maleylation of, 27
of mitochondria
enzymes, 265-69, 271-76
localization of, 265-68
membrane, 266-69, 276-78
mutations in, 275, 277, 278
organizational, 275
solubility of, 279
synthesis of, 269, 271-74
turnover of, 269, 270, 276
modification of
acylation, 113
alkylation, 110-12, 121
with α -alkyl- α -haloacids, 107
at arginine, 116, 117
arylation, 113
with arylsulphenyl halides, 105
with azobenzene sulphenyl bromide, 105
carbethoxylation, 112
with carbonyl reagents, 113
at carboxyl groups, 117, 118
at disulfides, 103-5, 108-10
histidine residues in, 102, 106, 107, 110-12
iodination, 112
with iodine, 102, 103
with maleimides, 107, 108
by maleylation, 113, 114
with mercurials, 105, 106
at methionine, 121, 122
nitration, 118, 119
with phenylglyoxal, 116
by reductive alkylation, 116
site specific, 110, 111, 123
by substrate analogs, 122
by succinylation, 113, 114
at sulphydryl groups, 102-8
and tertiary structure, 102
at tryptophan, 119-21
at tyrosine, 118, 119
nitration of, 118, 119
in plasma, 16, 17
quaternary structure of
assembly of, 39-46, 50, 51
and binding regions, 29
and biological phenomena, 59
cubic symmetry, 37, 38
cyclic symmetry, 34-37
dihedral symmetry, 35-37
dissociation of, 26, 27
equivalence in, 29, 39
extrinsic factors in, 57-59
geometry of, 29, 33-39
interactions in, 39-41, 44-46, 50, 51
intrinsic factors in, 56
and membranes, 59
modification of, 56-59
and muscle, 59
and nerve function, 59
and regulation, 26, 59
solute effects on, 58, 59
stability of, 36, 38
and substrate binding, 57
subunit stoichiometry, 26-34
and Svedberg hypothesis, 25, 26
tetrahedral, 35, 36
and vision, 59
sequence determination in
and maleylation, 113, 114
and X-ray diffraction, 64, 65
subunits of
assembly of, 39-46, 50, 51
binding regions of, 29
dissociation of, 26, 27
equivalence of, 29, 39
geometry of, 29, 33-39
and hybridization, 28
interactions of, 39-41, 44-46, 50, 51
number of, 29-34
and regulation, 26
stoichiometry of, 26-33
Svedberg hypothesis, 25, 26
symmetry of, 29, 33-39
table of, 30-33
succinylation of, 27
sulphenyl derivatives of, 103
synthesis of, see Protein synthesis
turnover of
in animal cells, 931-33
in bacteria, 931
and degradative rates, 943
mathematical formulation of, 932, 933
and synthesis rates, 942, 943
terminology of, 931, 932
X-ray diffraction of
in carboxypeptidase, 77-83
and catalysis, 70-73
in chymotrypsins, 83-87
difference Fourier technique, 66, 67
in elastase, 83, 88
and enzyme-substrate interactions, 66-68
isomorphism in, 66, 67
in lactalbumin, 94
limitations of, 64-68
in lysozyme, 74-77
in papain, 89-91
and protein folding, 68-70
resolution of, 64-66
in ribonuclease, 91-94
in sequence determination, 64, 65
in serine proteinase, 83, 88
and specificity, 73, 74
and structural stability, 67, 68
in subtilisin, 83, 88
Protein synthesis
in animal cells, 964
and bacteriophage infection, 535-41, 551, 552
chemical
calcitonin, 843, 847-50
glucagon, 842-47
ribonuclease A, 853-56
ribonuclease S, 856, 857
secretin, 850-53
cyclic AMP, effect, 956
and drug tolerance, 830
of glycoproteins, 622
hormone effect on, 806, 955, 956
inhibition of
by drugs, 942, 949
and ribosome formation, 199

SUBJECT INDEX

- and RNA synthesis, 199, 207, 208, 211
initiation of
control of, 462
and RNA sequence, 228, 239
in mitochondria
antibiotic effect on, 252
chloramphenicol effect, 271, 272
cycloheximide effect, 271, 272, 279
independence of, 272
inhibition of, 271
initiation of, 280
in vitro, 272, 279
messenger RNA of, 252
of mitochondrial proteins, 271, 279
nature of, 252
poky mutants, 275, 277, 279
proteins formed, 252
ribosomal, 273, 274
phenobarbital, effect of, 960, 961
rate of, 942, 943
regulation of
by amino acid availability, 967
in animal cells, 964-57
histone role, 966, 967
and RNA metabolism, 964-67
and RNA structure, 228
transfer factors in, 462
simulation of, 481, 483, 484
termination of, 228
transfer factors in, 460-62
- Proteoglycans
biosynthesis of, 621, 622
carbohydrate of, 604, 613, 616
as glycoproteins, 616
and Hurler's syndrome, 627
molecular weight of, 616
structure of, 616
Protoheme ferrolyase, 379
Pseudomonas aeruginosa
cytochromes of, 678
lipids of, 328
ribosomal RNA of
composition of, 187
sequence analysis of, 191
Pseudorabies virus, 707
Psuedouridylic acid
in ribosomal RNA, 188, 191, 192, 199, 214
Puromycin
and enzyme degradation,
- 946
and glycoprotein synthesis, 618, 619
Putrescine, 516
Pyridoxal phosphate
in cysteine synthetase, 463
and phosphorylase, 641
in tryptophan synthetase, 431-34
Pyridoxamine pyruvate transaminase, 31
Pyruvate carboxylase
allosteric effects in, 762
avidin reaction with, 773
cold-inactivation of, 762
dissociation of, 27
kinetic properties, 762
localization of, 267
manganese role, 764-66, 773
structure of, 759, 762
subunits of, 32, 35
symmetry of, 35
Pyruvate dehydrogenase
electron microscopy of, 444
as enzyme complex, 442, 444
genetics of, 442
localization of, 267
reactions of, 443
regulation of, 445-47
subunits of, 33
Pyruvate kinase
activation of, 660, 661
dissociation of, 26
forms of, 660
levels of, 936
organ specificity of, 950
properties of, 660, 661
simulation of, 475, 476
subunits of, 31, 661
Pyruvate phosphate dikinase, 405, 406
- R
- Rana pipiens, 254, 735
C-Reactive protein, 30
Red blood cells
hemoglobin of, 6, 7
ions of, 5
membrane of, 629, 630
Refsum's disease, 340
Repression
in arabinose operon, 165
in eukaryotes
coarse control, 166-73
director hypothesis, 173
fine control, 173-76
histone role, 167, 169-73
in lactose operon, 165
transfer RNA role, 165
Retinaldehyde, 787
Reversed-phase chromatography, 229
Rh antigens, 379
Rhizobium japonicum
cytochromes b in, 676
cytochromes b in, 682
nitrogen fixation by, 676
P-450 protein in, 680, 681
Rhodanese, 30
Rhodopseudomonas palustris
cytochrome b of, 680, 682
cytochromes c of, 689, 691
Rhodopseudomonas sphaeroides
cytochromes a of, 676
cytochromes b of, 680, 682
phospholipid metabolism in, 373
Rhodospirillum molischianum, 691, 692
Rhodospirillum rubrum
cytochrome b of, 680, 682
cytochrome c of, 691-94
cytochrome o of, 686
Ribonuclease
acetimidation of, 115
aggregation of, 41
alkylation of, 107, 111, 112, 121, 123
carboxymethylation of, 111
catalytic mechanism of, 93, 94
chemical synthesis of
activity of, 854
coupling, 853, 854
protecting groups, 843, 853-55
removal from resin, 854, 855
solid phase, 853-55
disulfides in, 109, 110
histidine residues in, 107, 111, 112
hybridization, use in, 146, 147
iodination of, 119
lysine reactivity in, 122
mercury derivatives of, 116
methionine in, 121
phenylglyoxal reaction of, 117
of rat liver, 969
renaturation of, 69
in sequence analysis, 237-40
specificity of
and lock and key hypothesis, 73
and X-ray studies, 92, 93

- stability to hydrogen fluoride, 854, 855
structure of
at active site, 92-95
cleft in, 70, 92
model of, 93
synthesis of, 69, 843, 853-55
X-ray diffraction of
and active site, 92-95
cleft in, 70, 92
conformation of, 68, 69
structure of, 65, 91-94
- Ribonuclease B
carbohydrate of, 602, 603, 605, 609, 611, 612, 618, 628
degradation of, 626
- Ribonuclease G, 237
- Ribonuclease S
chemical synthesis of, 843, 856, 857
stability to hydrogen fluoride, 854, 855
- Ribonuclease T₁
chemical synthesis of, 857, 858
hybridization, use in, 147
inactivation of, 117
in sequence analysis, 237-41
- Ribonuclease U₂
in sequence analysis, 237, 241
specificity of, 237, 241
- Ribonuclease IV, 237, 238
- RNA
adenovirus, 729
base composition of
and DNA composition, 186
and evolution, 186
methylated nucleotides, 188-90
pseudouridylic acid in, 187, 188, 58, 209
biosynthesis of
actinomycin D effect, 200-2
in animal cells, 964, 965
control of, 185-76, 374
in *E. coli*, 195-200, 214
estradiol effect on, 372
in eukaryotes, 165-76, 200-8, 214-16, 965, 966
and 5-fluorouracil, 199
in fragile *E. coli*, 196, 197
inhibition of, 966
in vitro, 175, 176
maturation of, 197, 199, 204
and methylation, 197, 199, 202-4, 208
in mitochondria, 263-65
nonconservative, 204, 205
in nucleoli, 200-8
in oogenesis, 215
phospholipid stimulation of, 372
and poliovirus infection, 203
precursors of, 198, 200-5
in prokaryotes, 165
and protein synthesis, 964-66
rate of, 197, 198, 203
regulation of, 219
and ribosome formation, 195-202, 206
and RNA polymerase, 197, 198
5S, 210-12
45S, 200-8
and secondary structure, 197
steps in, 195
chemical modification of, 240
in chromatin
content of, 154, 156
extraction of, 174
as regulator, 174
in chromosomes
as contaminant, 154, 155
nature of, 152, 154
from nucleolus, 155
quantity of, 154, 156
and regulation, 174, 175
ribosomal, 154, 155
cleavage of
chemical, 241
enzymatic, 237-40
modification of, 240, 241
nucleases used, 237-39
restriction of, 238-40
and RNA structure, 238, 239
dihydrouridine rich, 173
eukaryotic, 141-45
genes for
in bacteria, 213-16
clustering of, 214
coordinate expression of, 216, 217
in eukaryotes, 213-16
and evolution, 218, 219
functional differentiation of, 216, 217
multiple copies of, 213-16
nucleolar, 214, 215
purification of, 219
redundancy of, 213-16
ribosomal, 213-18
5S, 212
hybridization of
bacterial, 140
chain length effect, 134, 135
competition, 143, 144
and development, 143
in eukaryotes, 141-45, 214, 218
locus specificity of, 139, 140
nucleolar, 204
in organic solvents, 138, 139
ribonuclease use in, 146, 147
ribosomal, 143, 204, 213, 214, 216-18
5S, 217, 218
saturation, 143
transfer, 213
unpaired base effect, 135
viral, 139, 140
in immune response, 913, 914
lac operon, 140
messenger
accumulation of, 965
and enzyme synthesis, 966
hemoglobin, 965
hybridization of, 139, 140
isolation of, 145
in mitochondria, 265
and neuronal transmitters, 794
stability of, 987
tryptophan operon, 436
methylated nucleotides in, 188, 189
in mitochondria
biosynthesis of, 263-65
coding of, 252
homogeneity of, 252, 257
size of, 258, 259
types of, 252, 257-59, 263
nucleolar
biosynthesis of, 200-8
composition of, 204
electrophoresis of, 203, 204
genes for, 214, 215
hybridization of, 204
methylation of, 202-4, 208
nonribosomal sequences in, 204, 205
protein association with, 206
and ribosomal precursors, 200-8
7S, 206
45S, 201-6

SUBJECT INDEX

- size of, 203-6
 oligonucleotide characterization in borohydride labelling in, 242 by *in vitro* synthesis, 243 by mass spectrometry, 243, 246 by optical rotatory dispersion, 243 sequential degradation, 242, 243 spectrophotometric, 243 regulation role of, 165, 174, 175 ribosomal base composition of, 186-90, 205 in chromosomes, 154, 155 cleavage of, 202, 207 double-stranded regions of, 192, 193 eukaryotic, 200 evolution of, 194 genes for, 204, 210-16 heterogeneity of, 190, 192, 193, 216-18 hybridization of, 143, 204, 213, 214, 216-18 maturation of, 197, 199, 204 melting of, 192, 193 as messenger, 199, 200, 205 methylated nucleotides in, 188-92, 196 methylation of, 197, 199, 202-4 in mitochondria, 258, 259, 263 molecular weight of, 184-86, 258, 259, 263 nucleic acid degradation of, 194, 195 and nucleoli, 200-2 nucleotide sequences in, 190-92, 244, 245 precursors of, 198, 200-5 purification of, 230 5S, 206, 209-12, 230, 232, 236, 239, 240, 244 secondary structure in, 186, 192-95, 197 sedimentation coefficient of, 184-86 sequence analysis of, 230, 232, 236, 239, 240 species of, 185, 201-5 synthesis of, 195-208, 211, 212 terminal sequences of, 190, 191 tertiary structure of, 193-95
- 5S in bacteria, 209-11, 230 composition of, 209 in eukaryotes, 210-12 function of, 212 genes for, 214, 217, 218 methylation of, 240 origin of, 206, 210, 211 precursor of, 211 purification of, 230 secondary structure of, 210, 239 sequence analysis of, 209, 210, 212, 217, 218, 232, 236, 239, 240, 244 synthesis of, 210-12
- 7S origin of, 206 sequence of, 729
- 45S, 155 secondary structure of and cleavage, 238, 239 double-stranded regions, 192, 193 evolution of, 194 melting of, 192, 193 sequence analysis of bacteriophage RNA, 228, 245 and chemical cleavage, 241 chromatographic techniques in, 231, 235, 236 cleavage techniques, 237-41 and end-group methods, 232-34 and evolution, 218, 219 and homochromatography, 231 and methylated nucleosides, 191, 192, 234 oligonucleotide characterization, 241-43, 246 and phosphate termini, 234 polynucleotide fractionation, 231-35 purification techniques in, 228-31 in ribosomal RNA, 190-92, 244, 245 5S, 209, 210, 244 strategy of, 228 terminal labelling of, 190, 191, 232-34 transfer RNA, 227 viral RNA, 227, 228, 245 sequential degradation of, 242, 243 terminal labelling of, 233, 234
- tertiary structure of model of, 193 and nuclease degradation, 194, 195 in ribosomes, 194 transfer and adenovirus infection, 729 and aminoacylphosphatidyl-glycerol formation, 369 in bacteriophage infection, 551 fractionation of, 228-30 hybridization of, 140, 213 in mitochondria, 263 nucleotide sequences in, 244 and protein synthesis, 461, 462 purification of, 228-30 reconstitution of, 239 as repressor, 165 secondary structure of, 238, 239 sequence analysis of, 227, 233, 236, 237, 244 terminal labelling of, 233 viral biosynthesis of, 536, 537, 541-48 double-stranded, 536, 537, 541-43, 546 fragments of, 539 gene sequence of, 532, 533 infectivity of, 547, 548 as messenger, 530, 531, 535-37, 539 molecular weight, 529, 530 nascent strands of, 541, 542 properties, 529-33 purification of, 230, 231 replication of, 541-48 sequence analysis in, 227, 228, 233-35, 529-32, 548, 729 structure of, 529, 530 terminal triphosphates in, 233, 529-31 transfer of, 534, 535 translation of, 535-41 variants of, 548 see also specific viruses RNA bacteriophages adsorption of, 534, 535 assembly of, 548-50 coat proteins of amino acid sequence of, 533 and polymerase synthesis, 540 as repressor, 540

- synthesis of, 536, 537
 and virus structure, 533
 and host metabolism, 550-52
 maturation protein of, 533, 535, 537, 541, 549
 mutants of
 adsorption, 535
 coat protein, 533, 540
 maturation protein, 533, 537
 penetration, 535
 polar, 538
 in RNA polymerase, 537
 penetration of, 534, 535
 polarity in, 538-40
 properties of
 coat protein of, 533
 genetic, 532, 533
 maturation protein of, 533
 particles of, 528, 529
 RNA of, 230, 231, 245, 529-32
 serological, 528
 proteins of
 biosynthesis of, 536-41
 coat, 533, 535-37, 540
 maturation, 533, 535, 537, 541, 549
 RNA polymerase, 536, 537
 terminal amino acids of, 537
 release of, 552
 replication of
 double-stranded RNA in, 541-43
 RNA of, 541-48
 RNA of
 biosynthesis of, 536, 537, 541-48
 coding properties of, 530, 531, 535-40
 double-stranded, 536, 537, 541-43, 546, 547
 gene sequence of, 532, 533
 infectivity of, 547, 548
 as messenger, 535-37, 539
 molecular weight of, 529, 530
 nascent strands of, 541, 542
 nucleotide sequences in, 248, 529-31, 548, 729
 penetration of, 535
 properties of, 529-33
 replication of, 541-48
 secondary structure of, 529, 530
 transfer of, in infection, 534, 535
 translation of, 535-41
 variants of, 548
 RNA polymerase of
 biosynthesis of, 536, 537, 540
 purification of, 543, 544
 templates for, 544, 545, 548
 serological groups of, 528
 structure of, 533
 translation of
 and complementary strands, 537
 inhibition of, 540
 initiation of, 539-41
 in vitro, 537-41
 in vivo, 535-37
 maturation protein, 541
 polarity of, 538-40
 regulation, 538
 see also specific bacteriophages
 RNA polymerase
 and adenovirus transcription, 729
 of bacteriophage λ , 536, 537
 of bacteriophage Q β
 complementary strand synthesis, 546
 molecular weight of, 544
 purification of, 544
 RNA binding by, 545
 specificity of, 544, 545
 dissociation of, 58
 histone effect on, 175
 levels of, 166
 in mitochondria, 264
 nucleolar, 201
 rate of activity of, 197, 198
 regulation of
 levels of, 166
 sigma factor, 165
 and ribosomal RNA biosynthesis, 197, 198, 216
 sigma factor of
 function of, 459, 460
 and gene transcription, 721
 and specificity, 165
 subunits of, 33
 RNA tumor viruses
 antigenic, of, 740, 741
 and cell DNA, 743
 history of, 737
 properties of, 737, 738
 proteins of, 740, 741
 purification of, 739
 replication of
 and DNA replication, 741-43
 RNA of, 743, 744
 RNA of
 and DNA synthesis, 742, 743
 heterogeneity of, 740
 hybridization of, 745, 746
 replication of, 742-45
 transcription of, 743
 significance of, 747
 structure of, 739
 types of, 737, 738
 Ribonucleoside diphosphate reductase
 bacteriophage induced, 309, 310
 components of, 295, 296
 control of, 296, 297, 945
 inhibition of, 296
 levels of, 945
 reactions of, 295
 Ribosomal RNA
 see RNA, ribosomal
 Ribosomes
 biosynthesis of
 and eosomes, 195, 196
 and p-fluorophenylalanine, 199
 and 5-fluourouracil, 199
 and neosomes, 195-97
 precursors of, 195-202, 206
 RNA species in, 197, 198, 202
 in chromosome preparations, 154, 155
 in mitochondria
 demonstration of, 260
 nature of, 252
 properties of, 261, 262
 proteins of, 260, 263
 RNA of, 263
 size of, 260-62
 stability of, 260
 synthesis of, 273, 274
 precipitation of, 154
 RNA of
 base composition of, 186-90, 205
 in chromosomes, 154, 155
 double-stranded regions of, 192, 193
 and eosomes, 195, 196
 evolution, 194
 genes for, 212-18
 heterogeneity of, 190, 193, 216-18
 maturation of, 197, 199, 204
 melting of, 192, 193
 as messenger, 199, 200, 205
 methylated nucleotides in, 188-92, 196, 230
 methylation of, 197, 199, 202-4
 mitochondrial, 257-60, 263-65
 molecular weight of,

SUBJECT INDEX

- 184-86, 257-60
nuclease degradation of, 194, 195
nucleolar synthesis of, 200-6
precursors of, 198, 201, 202
5S, 206, 209-12, 230, 232, 244
secondary structure in, 186, 192-95, 197
sedimentation coefficient of, 184-86, 257-60
sequences of, 190-92, 244
synthesis of, 195-208
terminal sequences of, 190, 191, 244, 245
tertiary structure of, 193-95
transfer of, to cytoplasm, 174
types of, 185, 201-5
types of, 185
Ribulose diphosphate carboxylase
dissociation of, 26
subunits of, 32
Rose Bengal, 110
Rous sarcoma virus
purification of, 739
replication of, 741, 742
RNA of, 740, 745
transformation by and DNA synthesis, 741, 745
and hematoside, 722
Rutamycin, 273
- S**
- Saccharomyces cerevisiae
aspartate transcarbamylase of, 466
mitochondria of
DNA of, 254
ribosomes of, 261
RNA of, 258
phosphoinositide in, 337, 338
phospholipid synthesis in CDP-diglyceride role, 362
phosphatidylcholine, 368
phosphoinositides, 370
promitochondria in, 278, 279
ribosomal RNA of
composition of, 187, 209
methylated bases in, 189, 190
nucleotide sequences in, 244, 245
terminal sequences of, 190, 244, 245
transfer RNA of, 244
- Saccharomyces lacti, 256
Saccharomyces oviformis, 675
Salmonella typhimurium
O-antigen synthesis in, 328, 374-76
cysteine synthetase of, 462, 463
thymine synthesis in, 299, 300
transport in
by membranes, 569, 573
of sugars, 563, 566, 568, 572, 577
Salyrganic acid, 27
Saponin, 154
Sarcina lutea, 325, 326
Satellite tobacco necrosis virus, 234, 245
Sea urchin, 254
Secretin
function of, 850
structure of, 850, 851
synthesis of, 843, 851-53
- Serine
in glycoproteins, 606, 608, 613-16, 621
as phospholipid precursor, 372
protecting groups for, 843
- Serine dehydratase
degradation of, 934, 958
levels of
amino acids, effect of, 934, 987
assay of, 940, 946
in development, 949
diet, effect, 934, 958, 959, 965
glucagon, effect on, 934, 958
synthesis of, 934, 958
- Serine esterases, 123
- Serine hydroxymethylase, 297
- Serine transacetylase, 462, 463
- Serotonin
in morphine tolerance, 798
regulation of level of, 793, 794
- Serratia marcescens, 350
- Serum albumin, 41
- Shigella dysenteriae, 877, 678
- Shikimate kinase, 439-41
- Sialic acid
in glycoproteins, 604-7, 612, 614, 615, 621, 624
in transformed cells, 722
see also Neuraminic acid
- Smog, 103
- Sodium dodecyl sulfate, 26
- Sphingolipids, 343, 344
- Sphingomyelin, 338-40
- Sphingosine, 372
- Spleen acid ribonuclease, 238, 239
- Squalene, 326, 327
- Staphylococcal enterotoxin B, 109
- Staphylococcal nuclease
alkylation of, 122
histidine in, 112
nitration of, 118
nuclear magnetic resonance of, 112
- peptides of
analog of, 859
and enzyme activity, 858, 859
synthesis of, 858, 859
- Staphylococcus aureus
acceptor lipid in, 376
cytochrome o of, 682
dehydrosqualene in, 326
phospholipids of, 336
sugar transport in, 562-64, 567, 577
- Stearyl-coenzyme A desaturase, 377
- Streptavidin, 772
- Streptococcal nuclease, 65
- Streptococcal proteinase, 107
- β -Structure
in immunoglobulins, 895
in proteins, 69
- Subtilisin
iodination of, 119
nitration of, 119
structure of
at active site, 70, 74, 95
and catalysis, 88
sections of, 70
X-ray crystallography of, 65, 88
- tyrosine in, 122
- Succinate-cytochrome c reductase, 267
- Succinic dehydrogenase
catalytic mechanism of, 869
localization of, 267
- Succinoxidase, 480
- Succinylation
and hybridization, 28
- of proteins
and dissociation, 27, 114
in hybridization studies, 28
- lysine, reaction of, 113
- Sugars
transport of
binding proteins, 587-90
by membranes, 568-75
model of, 477, 575-77

- phosphoenolpyruvate role, 562-77
and phosphorylation, 562,
563, 567, 568
phosphotransferase role, 562, 563, 565, 566, 568, 575-77, 580, 581
see also specific sugars
Sulfatase, 119
Sulfate binding protein, 584, 585
Sulphydryl groups at active sites, 106, 107
alkylation of, 107
in chromatin, 158
in chromosomes, 158
determination of, 103, 104
and disulfide formation, 103-5
environment of, in proteins, 103, 107
in fatty acid synthetase, 449, 453-55
in hemoglobin, 995, 996, 1016
in histones, 172
hydrophobic interactions of, 103
oxidation of, 102, 103
in phosphorylase, 641
protection of, 106, 107, 843, 849, 850, 854, 856
reactions of, 103-8
reactivity of, 106
role in protein structure, 102, 103, 106-8
SV40 virus defective particles, 706, 707
DNA of and cell DNA, 707
hybridization of, 708, 707
properties of, 706
replication of, 712
strand separation in, 707
transcription of, 713, 714
genes of function of, 707, 708, 710, 711
and induced enzymes, 710, 711
as helper virus, 734
infection by and cell DNA synthesis, 709, 710
and cells used, 708
and cell transformation, 714-22
and enzyme induction, 710-12
productive, 704, 708-14
and replication, 708-14
and RNA synthesis, 713, 714
and virus-specific proteins, 714
polyptides of, 707
properties of, 705, 706
replication of and cell DNA synthesis, 709, 710
and cell transformation, 714-22
and enzyme induction, 710-12
events in, 708
RNA synthesis in, 713
and virus-specific proteins, 714
transformation by and antigen formation, 716-18, 720
cells, effects on, 721, 722
and Down's syndrome, 715
efficiency of, 714, 715
and Fanconi's anemia, 715
and late gene functions, 721
reversion of, 720
and viral RNA, 716
and virus rescue, 720, 721
Symmetry in protein structures binding regions, 29
cubic, 37, 38
cyclic, 34-37
dihedral, 35-37
geometry of, 29, 33-39
rotational axes, 34
in viruses, 38, 41
Synapses connectivities in and blood flow, 805
hypertrophy of, 799-801
metabolic activation, 803-7
and nerve growth factors, 805, 806
and neuronal specificity, 807-11
physiological events, 800-4
time-relationships, 800-11
and use, 799, 800, 811
morphine, effect on, 828, 832-35
nature of, 789-92
transmission in barbituate effect, 797, 798
events in, 792-95
regulation of, 794-98
transmitters, 789-94
transmitters in control of, 794-98
degradation of, 790
and drugs, 797, 798
excitatory, 792
inhibitory, 792
metabolism of, 792-94
release of, 789, 790, 793, 794, 802, 803
storage of, 792, 793
- T
- Taka-amylase, 602, 603, 605, 612
Tartaric acid dehydrase, 31
Tay-Sachs disease, 349
Teichoic acid, 374
Temperature-sensitive mutants, 301
Testosterone, 965
Tetrafluorosuccinic anhydride, 114
Tetrahymena pyriformis mitochondria of DNA in, 254
DNA synthesis in, 256
ribosomal proteins of, 260, 263
ribosomes of, 261
RNA of, 258, 263
phospholipid role in, 374
Tetranitromethane phenol reaction of, 118, 119
sulphydryl oxidation by, 103
tyrosine nitration of, 118, 119
Tetrathionate, 107
Thelin homocysteine methyl- pherase, 31
Thin layer chromatography, 340, 341
Thiobacillus neapolitanus, 373
Thiogalactoside transacetylase, 30
Thioredoxin bacteriophage induced, 310
reactions of, 295, 296, 310, 871
structure of, 296
Thioredoxin reductase active center of, 872, 873
FAD in, 872, 873
function of, 871
NADPH role, 296, 309, 871, 873
photoirradiation of, 872
properties of, 296
purification of, 872
reactions of, 295
specificity of, 873

SUBJECT INDEX

- subunits of, 872, 873
- Threonine**
biosynthesis of, 463
in glycoproteins, 608, 609,
611, 613-16, 621
protecting groups for,
843
- Threonine deaminase**, 31
- Thrombin**
nitration of, 119
subunits of, 30
- Thymidine kinase**
induction of, 710-12, 729,
730
levels of, 944
properties of, 711
- Thymidylate kinase**
bacteriophage induced,
303
levels of, 939
- Thymidylate synthetase**
bacteriophage induced, 305-
7
mutants of, 307
reaction of, 297
role of, 298, 300
- Thymidylic acid**
biosynthesis of
in bacteriophage infection,
305-8
control of, 300
from cytidine precursors,
293, 299, 300
from deoxyuridylic acid,
297, 298
pathway of, 293, 297,
298
phosphorylation of, 303
tetrahydrofolate role,
297
- Thyrocalcitonin**
see Calcitonin
- Thyroglobulin**
biosynthesis of, 618, 619,
621
carbohydrate of, 603, 605,
606, 610, 612, 613, 618
subunits of, 33
- Tobacco mosaic virus**
iodine oxidation of, 102
lysine, role in structure,
114, 115
picolinimidation of, 115,
116
protein of, 114, 115
- RNA of**
controlled cleavage of,
239
polynucleotides from,
231
terminal nucleotides of,
233, 245
side chains, reactivity of,
58
subunits of, 33
- Torulopsis utilis**, 274
- TPN**
- see NADP
- Transaminases**, 268
- Transcarboxylase**
mechanism of
kinetic analysis, 766,
767
metal ion in, 766
subunit role, 761, 762
- metal ion role in, 766
- reactions of, 758, 759
sources of, 759
- subunits of, 761, 762
- Transferase**
see Glycogen synthetase
- Transferase kinase**, 645, 651,
652
- Transfer RNA**
see RNA, transfer
- Transfer RNA methylase**,
721, 730
- Transferrin**
carbohydrate role in, 603,
628
degradation of, 626
modification of, 115
- Transformation**
definition of, 702
efficiency of, 714, 715
by RNA viruses, 741-
43
and transplantation antigens,
717, 718
and tumor antigens, 716,
717
- and virus infection
abortive, 704
and cell DNA synthesis,
710
cell, effects on, 719, 721,
722
efficiency of, 714, 715,
730
productive, 704, 708-14
virus-specific molecules,
715-19
- and virus rescue, 720
- Transglutaminase**, 103-5
- Transplantation antigens**
demonstration of, 717
purification, 718
role of, 717, 732
- Transport**
of amino acids
and arginine binding pro-
tein, 587-89
and leucine binding pro-
tein, 586
osmotic shock effect, 585,
588
and binding proteins
for arabinose, 588
for arginine, 587, 588
for galactose, 587,
589
for leucine, 585-87
osmotic shock effect, 582,
583
- reconstitution studies,
589
- role of, 588-90
for sulfate, 583-85,
589
- of calcium
ATPase in, 592, 593
binding protein role, 591,
592
vitamin D₃ in, 591,
592
- and chemotaxis, 590
- genetic studies of, 586-88
and group translocation,
575-78
in membranes
and barrier properties,
572-74
- enzymes role, 571
inhibition of, 571, 572
phosphoenolpyruvate role,
568-72, 574, 575
of sugars, 568-72, 574,
575
- temperature effect, 572,
573
- model of, 575-77
osmotic shock effect, 588,
589
- and pericytoplasmic proteins,
582, 583
- phosphatidylcholine role,
367
- phosphoenolpyruvate in
enzymes of, 563-65
genetic studies, 566-68
in membranes, 568-72,
574, 575
regulation of, 574, 575
role of, 565
transfer reaction, 562,
563
- of potassium ion, 590,
591
- proteins of
HPr, 563, 564, 576
localization of, 563, 564,
575, 576
in membranes, 568-71
and phosphate transfer,
563-65, 568, 575-77
purification of, 564,
565
- of sodium ion, 590, 591
- of sugars
and binding proteins, 587,
588, 593
- epinephrine effect, 664
- galactose, 570, 587,
589
- genetic studies, 566-68
inhibition of, 571, 572
- insulin effect, 603, 664
- by membranes, 568-72,
574, 575
- model of, 477, 575-77
- osmolarity, effect of, 573

- phosphoenolpyruvate in, 562-77
 phospholipase effect, 663
 phosphotransferase role, 562, 563, 565, 566, 568, 575-77, 580, 581
 regulation of, 574, 575
 in shocked cells, 565, 566
 temperature, effect of, 572, 573
 trehalase role, 664
 of sulfate
 cysteine effect, 583
 and sulfate binding protein, 584, 585, 589
Trehalase, 664
Triethylxonium fluoborate, 117
Triglycerides, 368
Tropomyosin, 30
Trypanosomal kinetoplasts, 253
Trypsin
 acetylation of, 115
 disulfides in, 109
 formylation of, 121
 inactivation of, 118
 methionine in, 121
 nitration of, 119
 structure of
 and chymotrypsin structure, 69
 and specificity, 88
Trypsin inhibitor
 arginine in, 116
 disulfide role in, 109
 nitration of, 119
 polyalanylated, 115
Trypsinogen, 119
Tryptophan
 and arylsulfenyl halides,
 reaction with, 105, 121
 in avidin, 772
 determination of, in proteins, 120
 formylation of, 121
 in hemoglobin, 994
2-hydroxynitrobenzylbromide
 reaction, 119-21
 and iodine, reaction with, 102
 in lysozyme, 112
 oxidation of, 119
 photooxidation of, 110
Tryptophanase
 conformation of, 57, 58
 dissociation of, 26, 27, 43
 subunits of, 31, 35, 57
 symmetry of, 35
Tryptophan operon, 436, 437
Tryptophan oxygenase
 dissociation of, 26, 27
 subunits of, 30, 57
 see also Tryptophan pyrolase
Tryptophan pyrolase
 assay of, 940
 levels of
 and degradation rate, 934, 957
 and development, 948
 glucocorticoid effect on, 934, 950, 956, 957, 965
 and tryptophan level, 934, 951, 957, 967
 see also Tryptophan oxygenase
Tryptophan synthetase
 of *E. coli*
 ammonium ion effect, 431
 complementation studies, 434, 435
 conformational changes in, 432
 genetic studies of, 435-37
 mutants of, 431, 432, 434, 435
 optical studies of, 432
 reactions of, 431, 432, 434
 subunits of, 431-36
 genetic studies of, 436
¹³C *Neurospora crassa*, 437, 438
 α subunit of
 alkylation of, 432, 433
 dimerization of, 434, 435
 reaction of, 431
 sulphydryl groups in, 432, 433
 β_2 subunit of
 dissociation of, 433, 434
 pyridoxal phosphate of, 431-34
 reaction of, 431
 subunits of
 interaction of, 434, 435
 in *Neurospora crassa*, 438
 properties of, 31, 438
 stoichiometry of, 434
Tryptophanyl-transfer RNA synthetase, 30
TSH
 narcotics, effect on, 822
 releasing factor for
 activity of, 505, 508, 509
 composition of, 507, 508
 nature of, 506-11
 purification of, 504-6
 structure of, 508-11
 synthesis of, 508-10
TTP, 306, 306
Tumor antigens
 coding for, 732, 733
 detection of, 716, 717
 function of, 717, 733
 properties of, 733
Turnip yellow mosaic virus
 nucleotide sequences in, 245
 subunits of, 33
 thiol groups of, 103
Tyrosinase, 30
Tyrosine
 acetylation of, 118
 biosynthesis of
 chorismate mutase in, 441, 442
 enzyme complex in, 439-42
 prephenate dehydrogenase of, 441, 442
 modification of, 102, 110, 112, 118, 119
 nitration of, 118
 oxidation of, 119
 photooxidation of, 110, 118
 protecting groups for, 843
 tetraniromethane reaction of, 118, 119
Tyrosine transaminase
 assay of, 940
 and estrogen, 950
 and glucocorticoids, 934, 941, 945, 948, 950, 951, 955, 956, 965, 967
 synthesis of, 934, 941, 945, 948, 955, 956, 965, 967
Tyrosine transferase, 947

U
UDP-galactose epimerase, 30
UDP glucose pyrophosphorylase, 643
UMP, 292, 293
Undecaprenyl phosphate, 374-78
Uracil
 degradation of, 945, 952, 953
Urea, 26, 40
Urease, 32
Uridine kinase, 743
Urocanase, 936
Ustilago sphaerogena, 237
UTP, 466

V
Vaccinia virus, 707, 729
Valine
 in hydrocarbon biosynthesis, 325

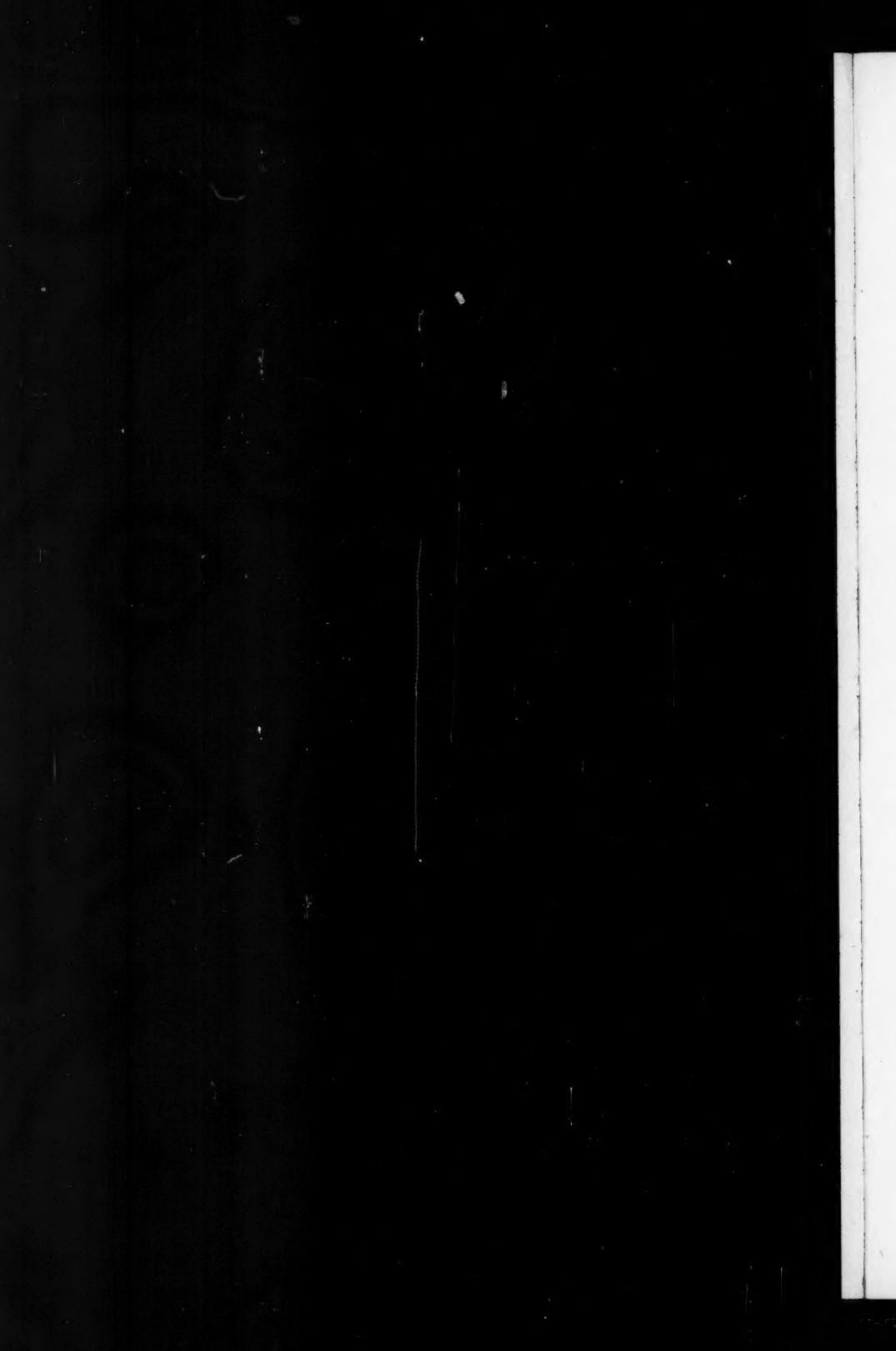
SUBJECT INDEX

- transport of, 585
V
 Valinomycin
 chloroplasts, effect on, 395, 396, 398, 401
 Vasopressin
 and ACTH release, 517, 518
 biosynthesis of, 501
Vibrio cholera, 329
 Vinyl ether hydrolases, 378
 Vinyl ether phosphatides, 364, 365
 Viral RNA
 see RNA, viral
Viruses
 oncogenic, see Oncogenesis
 subunits of, 33, 41
 symmetry in, 38, 39, 41
 see also RNA bacteriophage, RNA tumor viruses, and specific viruses

W
 Warburg effect, 416
 Wax esters, 332, 333

X
 Xanthine dehydrogenase, 949
 Xanthine oxidase
 diet, effect on, 938, 959
 flavin in, 883
 subunits of, 883
Xenopus laevis
 DNA of, 143
 mitochondria of
 DNA of, 254
 ribosomes of, 261
 RNA of, 259, 263
 ribosomal RNA synthesis in, 201, 202, 211, 212
X-ray diffraction
 of bone, 16
 of chromatin, 161
 of cytochrome c, 694
 of flavoenzymes, 868
 of hemoglobin
 and Bohr effect, 1011
 and conformational models, 1036
 iron in, 1028
 and ligand binding, 56, 57, 979-81, 983, 987
 and solvated structure, 987, 990
 subunit interactions, 52, 55-57, 979, 983
 symmetry of, 38, 37
 of immunoglobulins, 899
 limitations of
 in difference Fourier studies, 66, 67
 in enzyme-substrate interactions, 66-68
 isomorphism, 66, 67
 resolution limit, 64-66
 and sequence determination, 65, 66
 in substrate binding, 74
 of membrane phospholipids, 573
 and protein folding, 68-70
 of proteins
 and dihedral symmetry, 36, 37
 mercury derivatives, 110
 picolinimidyl derivatives, 115
 and solution studies, 123
 and protein structure
 in carboxypeptidase, 77-83
 and catalysis, 70-73
 in chymotrypsins, 83-87
 in elastase, 83
 and folding, 68-70
 in lactalbumin, 94
 limitations of method, 64-68
 in lysozyme, 74-77
 in papain, 89-91
 in ribonuclease, 91-94
 in serine proteinases, 83, 88
 in subtilisin, 83, 88
 of RNA, 192
 of tryptophan synthetase, 432
Xylose
 in glycoproteins, 600, 608, 613, 616, 621, 622





ANNUAL REVIEW OF BIOCHEMISTRY

Volume 37 • 1968

ANNUAL REVIEW OF BIOCHEMISTRY

EDITORIAL COMMITTEE (1970)

E. E. SNELL
D. S. HOGNESS
E. P. KENNEDY
H. A. LARDY
J. M. LUCK
M. NIRENBERG
H. K. SCHACHMAN
H. A. SOBER

**RESPONSIBLE FOR THE ORGANIZATION OF VOLUME 39
(EDITORIAL COMMITTEE, 1968)**

P. D. BOYER
D. S. HOGNESS
M. D. KAMEN
E. KENNEDY
J. M. LUCK
A. MEISTER
E. RACKER
H. K. SCHACHMAN
R. L. SINSHEIMER
H. A. SOBER

ANNUAL REVIEW OF BIOCHEMISTRY

ESMOND E. SNELL, *Editor*
University of California, Berkeley

PAUL D. BOYER, *Associate Editor*
University of California, Los Angeles

ALTON MEISTER, *Associate Editor*
Cornell University Medical College

R. L. SINSHEIMER, *Associate Editor*
California Institute of Technology

VOLUME 39

1970

ANNUAL REVIEWS, INC.
4139 EL CAMINO WAY
PALO ALTO, CALIFORNIA, U.S.A.

med
610.5
A615
R45
V.39

ANNUAL REVIEWS, INC.
PALO ALTO, CALIFORNIA, U.S.A.

Copyright © 1970 BY ANNUAL REVIEWS, INC.
ALL RIGHTS RESERVED

Standard Book Number: 8243-0839-5
Library of Congress Catalogue Card Number: 32-25093

FOREIGN AGENCY
Maruzen Company, Limited
6, Tori-Nichome Nihonbashi
Tokyo

PRINTED AND BOUND IN THE UNITED STATES OF AMERICA
BY GEORGE BANTA COMPANY, INC.

PREFACE

Once again it is pertinent to note that biochemistry and its alter egos, molecular biology and biophysics, have grown to a size that precludes even a reasonably complete review within one volume at yearly intervals. In last year's preface, we invited comments and suggestions from readers which would assist the Editorial Committee in meeting the problems of selection and emphasis raised by this situation; we received such comments from only one concerned reader. Whether this minimal response reflects general satisfaction with the *Annual Review of Biochemistry* as presently constituted, resignation in the face of an apparently insoluble problem, preoccupation with other matters, or simply the fact that the preface is rarely read we do not know.

In any case, the Board of Directors of Annual Reviews has seized the thorny problem of division and decided to establish an *Annual Review of Biophysics and Biomedical Engineering*, the first volume of which is scheduled for 1972. The problems of overlap in subject matter, duplication of reviews, competition for authors, etc., will be wrestled with by the respective Committees, which will coordinate the volumes as far as is possible. Your further comments and suggestions on these developments are welcome.

The preface permits us to express our appreciation for the service of Dr. Efraim Racker, who recently retired from the Editorial Committee after serving a five-year term, and to welcome Dr. Henry Lardy as his replacement. We acknowledge also the pleasant and efficient services of our Assistant Editor, Miss Janet Hector, of our indexer, Mrs. Beryl Glitz, her husband, Dr. Dohn Glitz, and of our printer, the George Banta Company.

The Editorial Committee

CONTENTS

A BIOCHEMIST'S ANABASIS, <i>A. Baird Hastings</i>	1
QUATERNARY STRUCTURE OF PROTEINS, <i>Irving M. Klotz, Neal R. Langerman, and Dennis W. Darnall</i>	25
X-RAY DIFFRACTION STUDIES OF ENZYMES, <i>D. M. Blow and T. A. Steitz</i>	63
SPECIFIC CHEMICAL MODIFICATION OF PROTEINS, <i>A. N. Glaser</i>	101
THE SPECIFICITY OF MOLECULAR HYBRIDIZATION REACTIONS, <i>Brian J. McCarthy and Robert B. Church</i>	131
THE EUKARYOTIC CHROMOSOME, <i>John E. Hearst and Michael Botchan</i>	151
STRUCTURE AND SYNTHESIS OF RIBOSOMAL RNA, <i>Giuseppe Attardi and Francesco Amaldi</i>	183
RNA SEQUENCE ANALYSIS, <i>P. T. Gilham</i>	227
THE BIOGENESIS OF MITOCHONDRIA, <i>Margaret Ashwell and T. S. Work</i>	251
ENZYMES OF NUCLEIC ACID METABOLISM, <i>James F. Koerner</i>	291
LIPID CHEMISTRY, <i>Morris Kates and M. K. Wassef</i>	323
LIPID METABOLISM, <i>W. J. Lennarz</i>	359
PHOTOSYNTHESIS, <i>D. A. Walker and A. R. Crofts</i>	389
MULTIENZYME SYSTEMS, <i>A. Ginsburg and E. R. Stadtman</i>	429
COMPUTER APPLICATIONS TO BIOCHEMICAL KINETICS, <i>David Garfinkel, Lillian Garfinkel, Martin Pring, Sylvan B. Green, and Britton Chance</i>	473
HYPOTHALAMIC RELEASING FACTORS, <i>Roger Burgus and Roger Guillemin</i>	499
THE BIOCHEMISTRY OF RNA BACTERIOPHAGE REPLICATION, <i>R. L. Stavis and J. T. August</i>	527
TRANSPORT, <i>H. R. Kaback</i>	561
GLYCOPROTEINS, <i>Robert G. Spiro</i>	599
GLYCOGEN METABOLISM AND GLYCOLYTIC ENZYMES, <i>Carlos Villar-Palasi and Joseph Larner</i>	639
BACTERIAL CYTOCHROMES: I. STRUCTURAL ASPECTS, <i>M. D. Kamen and T. Horio</i>	673

O ^C NCOGENIC VIRUSES, Maurice Green	701
MECHANISM OF BIOTIN ACTION, J. Knapp	757
NEUROCHEMISTRY: AT THE CROSSROADS OF NEUROBIOLOGY, Eugene Roberts and Steven Matthysse	777
BIOCHEMISTRY OF ADDICTION, Vincent P. Dole	821
CHEMICAL SYNTHESIS OF PEPTIDES AND PROTEINS, A. Marglin and R. B. Merrifield	841
FLAVOENZYME CATALYSIS, Allen H. Neims and Leslie Hellerman . .	867
THE ANTIGEN RECEPTOR PROBLEM, Henry Metzger	889
CONTROL OF ENZYME LEVELS IN ANIMAL TISSUES, Robert T. Schimke and Darrell Doyle	929
HEMOGLOBIN, Eraldo Antonini and Maurizio Brunori	977
INDEXES	1043
AUTHOR INDEX	1043
SUBJECT INDEX	1095
CUMULATIVE INDEX OF CHAPTER TITLES, VOLUME 35 TO 39	1133
CUMULATIVE INDEX OF CONTRIBUTING AUTHORS, VOLUME 35 TO 39	1135

REPRINTS

The conspicuous number (714 to 743) aligned in the margin with the title of each review in this volume is a key for use in the ordering of reprints. The reprint numbers pertinent to earlier reviews are given in a free Reprint Brochure which is available on request. All of the 214 available reprints are listed chronologically, both by author and by subject, in the descriptive brochure.

NEW REPRINT POLICY

Beginning with this volume of the *Annual Review of Biochemistry*, reprints will be available from all future Annual Reviews volumes. Reprints of most articles published in the *Annual Reviews of Biochemistry and Psychology* from 1961 to 1970 and the *Annual Reviews of Microbiology and Physiology* from 1968 to 1970 are now maintained in inventory.

Available reprints are priced at the uniform rate of \$1 each postpaid. Payment must accompany orders less than \$10. The following discounts will be given for large orders: \$5-9, 10%; \$10-24, 20%; \$25 and over, 30%. All remittances are to be made payable to Annual Reviews, Inc. in U.S. dollars. California orders are subject to a 5% sales tax. One-day service is given on items in stock.

For orders of 100 or more, any Annual Reviews article will be specially printed and shipped within 6 weeks. Reprints which are out of stock may also be purchased from the Institute for Scientific Information, 325 Chestnut Street, Philadelphia, Pa. 19106. Direct inquiries to the Annual Reviews, Inc. reprint department.

The sale of reprints of articles published in the *Reviews* has been expanded in the belief that reprints as individual copies, as sets covering stated topics, and in quantity for classroom use will have a special appeal to students and teachers.

and their effects on health. A healthy amount of exercise will help to prevent and treat most diseases. In fact, it can even extend our life expectancy. Physical activity can improve our heart health, reduce our risk of developing certain cancers, and help us maintain a healthy weight and reduce the risk of type 2 diabetes.

COLON TUMOR RISK

The relationship between exercise and colon cancer risk is complex. Some studies have found that physical activity may reduce the risk of developing colon cancer, while others have found no significant association. This may be due to the fact that colon cancer is influenced by many factors, including diet, genetics, and environmental exposures.

Annual Reviews Inc. and the Editors of its publications assume no responsibility for the statements expressed by the contributors to this *Review*.

Colon cancer is the third leading cause of cancer deaths in the United States. It is estimated that about 140,000 new cases of colon cancer will be diagnosed in the United States each year. While the exact cause of colon cancer is not known, it is believed that a combination of genetic, environmental, and lifestyle factors play a role. One factor that has been linked to an increased risk of colon cancer is physical inactivity. Studies have shown that people who are less active have a higher risk of developing colon cancer than those who are more active. This may be because physical activity helps to keep the colon healthy by promoting regular bowel movements and reducing the amount of time that cancer-causing substances spend in the colon. However, it is important to note that physical activity is just one factor in the development of colon cancer, and other factors such as diet and genetics also play a role.

